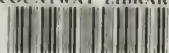


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### SOME PRACTICAL POINTS ON THE TREATMENT OF FRACTURES\*

R. W. BILLINGTON, M.D., F.A.C.S., Nashville

THE PROBLEM OF FRACTURES has grown rapidly in importance in recent years due to the great increase in incidence and severity of such injuries resulting from automobile and industrial accidents. Much progress has been made in the treatment of these cases, especially during and since the World War. Much of the knowledge developed in the handling of war injuries has been helpfully applied to Civil Practice and has stimulated further studies in principles and technic so that better average results may now be obtained if the physician or surgeon has kept abreast of these developments.

The general practitioner, more often than ever before, is called to meet these emergencies, now so frequent in the country as well as in the towns and cities. It is, therefore, important that every one who may be subject to such calls shall be at least prepared to handle efficiently the first aid care, even though they may prefer to put the patient in the hands of a fracture surgeon later.

In a subject as complex and technical as the treatment of fractures it is hardly to be expected that every practitioner can have full knowledge and experience in all phases of it but he can, at least, learn to give efficient first aid and, if he is more ambitious, with a fair knowledge of anatomy and body physics and mechanics, he can obtain good results in the less serious and

uncomplicated cases. It must be emphasized that the treatment of fractures requires handwork as well as headwork and those who have no liking or "knack" for doing things with their hands, with some ingenuity and craftsmanship, had better leave this as well as other operative surgery alone. No two fractures are exactly alike in all respects. Hence it is impossible to make a few rules to cover all cases. The subject as a whole cannot be greatly simplified, though it can be clarified by the knowledge of general principles.

Realizing the need for further dissemination of such knowledge in order to improve results generally, the Fracture Committee of the American College of Surgeons was formed and has organized State or Regional Committees to assist in stimulating interest in this subject. As Secretary of the Tennessee Regional Committee I wish to enlist the cooperation of this Society in helping to improve methods and results in the management of fractures in our State. I wish to call your attention to as many of the general principles and practical points of this subject as time will permit here.

#### FIRST AID

The injured patient should first be examined hastily for hemorrhage and, if present, a tourniquet or other pressure applied with the least possible movement of the limb. If there is severe pain on handling a hypo of morphine should be given. Acute pain in the spine or an extremity of one who has been injured in an accident should

\*Read before the Middle Tennessee Medical Association, Woodbury, May, 1933.

be considered as meaning fracture until proven otherwise. Open wounds often mean compound fractures and should be protected at once by a sterile dressing. Active disinfection and treatment can wait until the patient is moved to office, home or hospital. Bone fragments protruding through the skin should not be reduced until he is carried to a proper place for such treatment.

A broken bone usually means more or less injury to neighboring soft tissues. Further damage to these structures and displacement of bone fragments may be caused by improper handling of the patient. Therefore, some form of protection should be applied before he is moved—and all unnecessary manipulation should be avoided. "Splint 'em where they lie." During the World War the British reduced their mortality in fractured femurs from 75 to 25 per cent by having stretcher bearers apply Thomas splints before transporting these cases. All ambulances going to accident cases should carry Thomas arm and leg splints and some one who knows how to apply them for transportation. If a proper splint is not available a piece of board may be used to advantage, or an arm may be bound to the body or one leg to the other, to produce at least partial protection. A back injury should be kept recumbent and flexion of the spine avoided. Head, neck and pelvis fractures require especially careful handling. Morphine and avoidance of further trauma by these precautions will often prevent or minimize shock, and thus permit more prompt and effective treatment of the fracture, besides conserving life, itself, in the more serious cases.

### EXAMINATION

As soon as the patient has been transferred to a suitable place a complete and thorough examination of the patient as well as of his bones should be made, provided there is not extreme shock, which would require appropriate treatment first.

When a fracture is suspected one should look for deformity (faulty contour and position), shortening, swelling and ecchymosis. If present, palpation may reveal a

greater point of tenderness over the bone, false movement, irregular bony contour and crepitus. Only very gentle manipulation should be used to elicit crepitus in any event, and if X-rays are available this sign should not be sought at all. Pain on movement or strain applied to the affected bone is very suggestive. When one or more of the above symptoms and signs is present X-rays should always be made as soon as practicable. If such is advised and the patient refuses, then it becomes the latter's responsibility if results are not satisfactory. Films should be made, as fluoroscope is unreliable for diagnosis.

Another important point which is often forgotten at first is to look for signs of nerve injury. It is very embarrassing to discover a wrist drop or other form of paralysis only when the splint is removed some weeks later; and in spine fractures with cord injury it is of the greatest importance to know whether the paralysis below the level of injury was immediate or gradual in onset, and whether complete or partial. The condition of the other soft tissues should also be carefully noted. Rupture of larger blood vessels may be a serious complication and is indicated by rapid swelling, diminished or absent peripheral pulsation and sensation, coldness and blueness or blanching of parts distal to the injury.

### TREATMENT

In compound fractures the wound should be as thoroughly sterilized as possible. If there is much damage to soft parts a debridement is required to excise severely lacerated and devitalized tissues. If a bone is protruding it should be well cleansed before any effort at reduction. If there has been much soiling a drain or light vaseline gauze pack can be used with partial closure of the wound. In infected cases treatment with Carrel-Dakin method is used. A. T. S. should always be given within 24 hours. Of course, all hemorrhage should be controlled, and small detached fragments of bone should be removed. Severed tendons and nerves should be sutured if the ends can be located without dissection which would open new areas to infection. If these



are retracted or difficult to identify it is best to wait and repair them after the wound has been healed for a few weeks.

### REDUCTION

This should be made as soon after the injury as possible and as gently as conditions will permit, never using enough force to seriously damage soft tissues or neighboring joints or to cause shock. Reduction should be as complete as necessary for good union without deformity or disability. More perfect approximation of fragments is required near joints than in the shafts of long bones or in the pelvic bones. It is bad practice to prolong or repeat manipulations in trying to get a perfect X-ray or anatomical reduction when the position of fragments is good enough for the functional and cosmetic results. For this reason it is often better not to let the patient or family see X-rays, as they may be unduly alarmed by slight or unimportant displacement of fragments. Surgeons are sometimes guilty of the same. When painful manipulation is required a general anesthetic should usually be employed. Bohler's method of local anesthesia will do in selected cases. Reduction under the fluoroscope is helpful in some cases, but X-ray negatives should be made to check up the position and be kept as a permanent record.

The method of reduction varies in different fractures, and is by (1) manipulation or (2) traction or both combined, or (3) by open operation. Manipulation involves pressure against the fragments in certain directions or leverage or a combination of these forces. Traction is produced in several ways or combinations, the choice depending on the location and other special conditions. Manual pull, gravity, mechanical aids, such as screws, block and pulley and weight and pulley are examples in common use for both temporary and continued traction. The hold on the limb may be obtained by the hands of operator or assistant or a broad bandage or cuff, for temporary traction, whereas, if it is to be continuous, adhesive plaster on the skin or metal pins or tongs in the bone are generally employed. Traction on the clavicle is maintained by

any appliance which holds the shoulder upward, backward and outward, such as the "plaster yoke" dressing which I have devised. Traction on the vertebral bodies, in the case of a compression fracture, is best held by hyperextension of the spine in recumbency in a cast or on a convex stretcher frame.

Most fractures should be reduced, if possible, immediately at a single sitting. Some are best treated by gradual reduction by continuous traction, with or without supplementary manipulation. This method is used particularly in fractures of the shafts of humerus and femur that tend to slip after manipulative reduction alone. It also works well in some forearm and leg fractures and in the intertrochanteric or extracapsular fractures at the hip. Fractures of the metacarpals are also treated in this way.

Reduction can be maintained in various ways: (a) Position, such as the Jones position of acute flexion of the elbow; (b) Splints, casts, pressure pads and other external appliances; (c) Traction, with or without suspension, splints and appliances; (d) Internal fixation at operation by notching the ends of fragments so they will "stick," by sutures of wire, chromic gut or kangaroo tendon, by ivory and bone pegs or grafts, and by metal plates, bands, screws, etc. I believe it is rarely necessary or advisable to use metal or other non-absorbable materials in the tissues, as they add to the dangers of infection and non-union and often require a second operation for removal, when otherwise successful. Such rigid means of internal fixation are usually unnecessary if the parts are supported by a proper external appliance after the operation.

To select the best method for a particular case involves many considerations and may test the skill and judgment of the most experienced surgeon. On the other hand, many fractures may be held equally well by several methods, in which instance the surgeon should use the method or material he can handle best, though he must be careful to fit the appliance to the patient and not try to fit the patient to the appliance which he happens to have most conveniently

at hand. Most fractures of the upper extremity and of the lower leg and foot can be well treated with the patient ambulatory, even after open reduction (if necessary), which is a great advantage to the patient. But some of those of the upper humerus and of the tibia will require continuous traction in the bed for three or four weeks, or more, before being allowed to get about with a protective cast or splint.

Every fracture has its special features to be considered after reduction has been accomplished. The danger of redisplacement depends on the shape and location of the bone involved; the direction of the line of fracture, whether comminuted, oblique or transverse, and whether supported by other bones, as in the forearm, ribs, leg, hands and feet; the amount of deforming muscle pull, gravity (weight of distal parts), leverage, etc. Excessive thickness of fat and muscles covering the bone make fixation of fragments far more difficult than in those superficially located. For this reason we all prefer to treat fractures in thin patients rather than very fat ones. Open wounds and excessive swelling of soft parts may seriously interfere with the use of splints for maintenance of reduction and often require a complete change of method from what would otherwise be the one of choice.

The age of the patient is often a determining factor as to the best type of fixation appliance as well as to time required for union. There is less tendency to displacement of fragments from muscle pull in children and old people than in robust adults. The Bryant method of vertical suspension is very satisfactory for fractured femurs in young children, but is not at all practicable in adults. Many other examples might be mentioned.

In selecting the appliance, the effect on neighboring joints as well as on the fracture must be given proper consideration. Temporary stiffness often results, and if the fracture is near or into the joint or if there is much damage to muscle or tendons the possibility of permanent limitation of motion or complete ankylosis must be anticipated. It is possible in most cases to im-

mobilize the fragments so that the limb is in or near the position of election for best function in the event stiffness results, though there are certain exceptions, such as fractures of the olecranon process (full extension), other elbow fractures (acute flexion), and in upper and lower ends of the femur where abduction at the hip and flexion of the knee are required to maintain reduction. But when such positions are required for proper union we should remember to change this position as soon as possible without causing displacement or angulation at the fracture. A limited range of motion in a joint may cause little disability if in the best arc, whereas the same amount in a different arc would be a serious handicap. The position of election of each joint must be understood and this may vary slightly in different patients, depending on the occupation and preferences of the individual. It is generally understood that a stiff elbow should be flexed 60 to 90 degrees, and that a hip or knee should be nearly straight, but is surprising how often such facts are forgotten until too late for easy correction. It is not uncommon to see useless stiff fingers in full extension that have been treated on a tongue depressor or other straight splint, an equinus deformity at the ankle, a flexed wrist and other such evidences of bad splinting. Function of the limb as a whole must be considered from the beginning of treatment, as well as the union of the fracture itself. In cases of serious injury about a joint which is apt to result in permanent stiffness it is better to sacrifice a perfect union of the fracture in favor of the best position for the joint, if both desiderata cannot be obtained at the same time.

Splints and casts which completely encircle the limb, if applied before the swelling reaches its maximum, should be applied with sufficient padding and rather loosely. Then they should be further loosened if pain becomes severe or obstructive changes in circulation (swelling, blanching or cyanosis) or numbness of distal parts should develop. The pressure must be released without delay, as a few hours of obstructed circulation may result in a Volkmann's



ischemia with permanent crippling. It should also be remembered that this condition can occur in the lower as well as the upper extremity. If the patient is not in hospital under continued observation, he should be instructed how to release the pressure if the above symptoms should develop and the surgeon cannot be gotten at once. His understanding the importance of this may save him much suffering and disability, and the doctor a malpractice suit.

It is obviously impossible to discuss the technical details of management of the various special fractures of the different bones, or even the more frequent ones, at this time.

Many of my remarks may have appeared trite or elementary to most of you, but I'm sure all of you will agree that the application of these facts and principles is not always easy, and that there is still room for improvement in technic and results with all of us.

Most hospitals, as well as physicians' offices, should be better equipped for fracture work. Makeshift methods are too often used. I often think that our knowledge and application of mechanical principles and technic, so important in this class of work, would not compare any too favorably with that of the average carpenter or plumber as applied to their work. A few necessary splints, such as Thomas arm and leg, and

Jones' humerus traction and airplane splints and Bradford frames, require the services of a mechanic to make, but with a few materials and a little industry and ingenuity the surgeon can meet nearly all the other needs with his own efforts. A typical Balkan Frame or expensive fracture bed are rarely essential. An overhead frame for suspension of a fractured femur in a Thomas splint can be easily erected in 30 minutes from three boards. Ready-made, manufactured splints are expensive and rarely fit the case in hand. Coaptation splints, cockup wrist splints, gutter splints, curved finger splints and others are easily fashioned to fit from tin, galvanized sheet metal or, better, sheet aluminum by means of an ordinary pair of tinners' shears. Basswood or thin boards from wooden crates make useful splints for some cases. Plaster of Paris for casts and moulded plaster splints is invaluable and no one can treat the general run of fractures without it, and the ability to apply it, which requires some experience and skill, to be safe and effective. With these few splints and materials and the necessary padding of cotton sheet-wadding, felt and stockinette, the surgeon can meet nearly every need in the treatment of all cases, except those requiring open operation or skeletal traction.

## DON'T FORGET THE GALL BLADDER\*

C. P. Fox, M.D. F.A.C.S., Greeneville

**M**Y APOLOGY for the title of this paper is the fact that so frequent in the search for the explanation of obscure symptoms, such as hypertension, rheumatism, so-called auto-intoxication, eczema and other skin rashes, glucosuria, anemias, myocarditis, neurasthenia and psychoses of the hypochondriacal type, the gall bladder is so often overlooked as the probable offending organ.

So many of these cases have come to us, after having had their tonsils removed, their teeth extracted, their sinuses drained, their appendices removed, a thyroidectomy, their prostates massaged or removed and after examination and study of the gall bladder, the focus is found to be a cholecystitis, which has been unsuspected. We have seen each of the above mentioned ailments relieved after a cholecystectomy for a diseased gall bladder.

It has been our not infrequent experience to find the chief complaint of the patient is not the classic symptoms of gall bladder disease, but those attributed to some other complaint. Our hospital files show numerous cases admitted for treatment for one or the other of these complaints, which on thorough examination have shown an underlying gall bladder disease, which, when removed, has given relief of the symptoms. So frequent has been this experience, that I am convinced that the gall bladder has been a far more frequent reason of a so-called focal infection than has been formerly suspected.

Our improved methods of cholecystography have enabled us to diagnose these obscure cases far more accurately than formerly and thus to institute treatment much earlier and thereby arrest destructive processes in the liver, heart, kidneys, joints, etc., that have formerly been allowed to

proceed to the point of permanent invalidism and early death.

It is not the purpose of this paper to discuss in detail the diagnosis of these cases, except to say that we do not rely on any method for cholecystography except the intravenous use of Iodeikon (Iodphenolphthalein soda), with the proper and experienced interpretation of the X-ray plates, in reference to concentration of the dye, size, position and outline of the gall bladder, its relation to the duodenal cap, hepatic flexure of colon, shadows of stones and emptying time. Experience has taught us that in our earlier experience we often made the mistake to rest the diagnosis on the fact that the dye entered the gall bladder at all, disregarding the degree of concentration, size, position and relations and emptying time.

A larger experience has enabled us to correct many of our former errors of interpretation. It has been our not unusual experience to find patients who have been examined elsewhere and told the gall bladder was all right, after the proper study and correct interpretation, to show that the gall bladder was not only diseased but contained stones.

In view of the above observations, which have been so abundantly proven by experience and recognizing that any man, with a considerable experience in gall bladder surgery, must have been impressed with the same observations, it is surprising how little has been written on the subject of focal infections from the gall bladder.

If we accept the theory of focal infection as the cause of most of the disabilities that affect the human body, especially from the period of middle life to the grave, why do we so often forget the gall bladder? In our search for these foci, we have our minds first on the tonsils, teeth, sinuses, pelvis, prostate, kidneys and appendix. Yet I think it can be shown that the gall bladder is by far the most frequent cause of the

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\*Read before the East Tennessee Medical Society, Knoxville, Tennessee, September 12, 1933.

disabilities that produce a semi-invalidism and ultimately death, than any or possibly all of the others. True it may be secondary to these, but before the teeth are out or the tonsils removed or the sinuses drained, etc., the gall bladder is already involved and as a secondary focus which continues to feed the toxins into the lymphatics and blood streams and the patient is little benefited by removing the primary focus. In fact, it is my belief that the gall bladder is often the primary focus since it is so often involved in acute infectious diseases such as pneumonia, influenza, acute tonsillitis, scarlet fever, typhoid fever and acute infections of the gastro-intestinal tract. How often have we not seen the evidence of acute cholecystitis associated with these diseases, and when not recognized as an associated condition, we have observed the symptoms following in the train of these infections.

Our knowledge of gall bladder disease, the pathology and technique of its treatment belong almost exclusively to modern medicine. Most of the conditions which were formerly diagnosed and treated under the various names of biliousness, indigestion, flatulence, bilious colic, by the older practitioners, we know now had their origin in the biliary tract. Acute indigestion, acute gastritis, ptomaine poisoning, etc., with nausea, pain, vomiting, chills, temperature, we now recognize as most often an acute cholecystitis. All such symptoms should immediately engage our attention to investigate the gall bladder as a probable source of these symptoms. It is not these, however, to which I would especially direct your attention, but to the more remote and more obscure symptoms which we so often meet and find difficulty in explaining as those mentioned above and in which the classic gall bladder symptoms are not prominent.

Referring to the gall bladder as a source of focal infections, Wilkie of Edinburgh has shown that cultures of streptococci viridans can be obtained from the walls of the gall bladder and pericholecystitic glands in many cases where the gall bladder looks fairly normal and where no cultures can be obtained from the bile. This probably accounts for the frequency with which we

find adhesions around the infundibulum and ducts while the fundus appears normal.

Long ago, Roseneau as you will recall, showed he could produce a cholecystitis in the rabbit by injecting a culture of streptococci viridans obtained from cultures from the tonsils and dead teeth. It then seems clear that the gall bladder may become a secondary focus from these sources and be a residual focus. This may account for the frequency with which the symptoms of infection persist after the primary source of infection has been removed. This opinion is not simply a theory, but is abundantly proven by the frequency with which these symptoms are relieved after a cholecystectomy. Many observers have been impressed with the truth of this observation, but few have written extensively on this subject. Graham, in his book on diseases of the gall bladder and bile ducts, in the chapter on cholecystectomy in differential diagnosis, says: "This test is extremely useful in chronic heart disease and angina pectoris. We have observed brilliant results in cases of heart disease following cholecystectomy, in which cholecystography has revealed a pathologic gall bladder. We know of suspected cases of angina pectoris receiving complete and permanent relief following cholecystectomy. In those pathologic conditions which may be ascribed to a hidden focus of infection, cholecystography will often reveal a diseased gall bladder that is symptomless. We have known cases of chronic arthritis relieved by cholecystectomy after the presence of a diseased gall bladder was established, just as has occurred in cases of heart disease. When all the other sources of focal infections have been eliminated, this test can be counted on to great advantage."

All these observations have been abundantly proven to be true by our own, although more limited, experience, and our hospital records can furnish proof confirming this observation, as well as many others not mentioned by Graham. It would be impossible in the course of this short paper, to report even one case belonging to each class mentioned. However, we have selected from our files a few of our most interesting



cases illustrating our contention that the gall bladder is often overlooked in searching for a hidden focus of infection.

More than twenty years ago my attention was called to the gall bladder as a possible source of focal infection, in a patient on whom I operated, removing a gall bladder embedded in a mass of adhesions, containing one large stone and filled with pus, with complete obstruction of the cystic duct. This patient for ten years had suffered from a fine papular, itching rash affecting especially the face and for which she had consulted specialists in Baltimore, Philadelphia, Grand Rapids and Chicago. This was her chief complaint.

In the course of her examination by two internationally known gastroenterologists, she was found to have an achylia, but if the gall bladder was suspected, it was not mentioned. Since this case was operated in 1916, I have seen many cases of chronic skin affections, such as eczema, psoriasis, so-called allergic rashes clear up after cholecystectomy.

Six years ago a patient, female, seventy-three years of age, was brought to the hospital suffering with an acute empyema of the gall bladder with stones. The gall bladder was removed. It was found covered with a mass of adhesions and the walls were one-fourth inch thick. This patient had suffered from hypertension for several years, pressure running as high as 240. She also was subject to a recurring rash which covered her entire body and which was accompanied by a distressing itching. Three months previous to admission to the Greenville Hospital she had spent two weeks in the Ford Hospital in Detroit for examination and diagnosis of the cause of her hypertension and this rash. If the gall bladder was suspected, she was not so advised. Following her operation within two weeks her systolic pressure was reduced to 170 and she never had a recurrence of her rash.

In looking over our records I find a number of cases of hypertension of obscure origin which have been diagnosed as essential hypertension that have been relieved by cholecystectomy. Also a number of cases in which we have found a cholecystitis diag-

nosed by cholecystography, as the only case of hypertension who has refused operation, for whom we have been able to do little. In many, the clinical symptoms were not sufficiently prominent to attract attention, but the diagnosis was made by cholecystography.

Our records also show a considerable number of cases of anemia, both secondary and pernicious, of obscure origin who show a gall bladder disease and when we consider how constantly an achylia is associated with a pernicious anemia, and the fact too that a certain degree of achlorhydria is always present in chronic gall bladder disease, is it not quite possible that the cause of these anemias may, in many cases, be traced to a primary gall bladder disease?

Rheumatism: In looking through our files we find a large number of cases of so-called rheumatism of both muscular and arthritic type, which were associated with gall bladder disease and which were improved or cured by a cholecystectomy. And in view of the findings of Wilkie and others of the streptococci viridans in the walls of the gall bladder and our constant association of this type of infection with rheumatism, is it not a reasonable conclusion that many cases of rheumatism may have originated from such a focus?

Diabetes and Glucosuria: Our records show a number of cases of glucosuria associated with gall bladder disease. One recent case of especial interest was a patient who for more than a year had showed two plus sugar in the urine without clinical symptoms of a gall bladder disease. An X-ray examination of the gall bladder showed definite shadow of stones. On removal of the gall bladder the sugar disappeared from the urine within a week and repeated examinations since, over a period of several months, have shown the urine sugar free, although the patient is on a full carbohydrate diet. When we consider how frequently pancreatitis is associated with cholecystitis, it is reasonable to conclude that gall bladder disease may be a frequent cause of diabetes.

Pyuria and pyelitis: A recent case of colon pyelitis, who in the course of X-ray



examinations for a pyelogram of the right kidney pelvis showed in the plate four distinct shadows of stones in the gall bladder. The gall bladder was removed and cultures showed colon bacilli. Within a week the pus and bacteria completely disappeared from the urine. In looking over the records of our gall bladder cases we find many cases who have shown varying amounts of pus in the urine.

**Toxemia of Pregnancy:** We have one case in our files in which we find a Cæsarian was done for eclampsia. The gall bladder was found to contain a large stone. A cholecystectomy was subsequently done on this case. Of course one swallow does not make a summer and no one case proves a conclusion, but I would ask the question: if gall bladder infection may not offer a possible explanation some times at least of this otherwise obscure toxemia?

**Neurasthenia, Hypochondriasis, Melancholia:** That complex of psychoneurotic symptoms we denominate by the above terms has many times been relieved in the observation of the gall bladder surgeons by removing an offending gall bladder. Our files show a number of such cases. In this group we would mention one of especial interest. A woman forty years of age had been suffering for several years with a depressive psychosis with suicidal tendency. One evening she sent her husband to the barn on an errand. Upon his return, he found his wife lying upon the floor in a pool of blood, with a knife wound in the abdomen, extending from the middle line along the right costal margin about four inches in length, through the entire thickness of the abdominal wall. I was called and found the gall bladder exposed. She was unable to complete the operation and I finished it for her. I removed a large gall bladder containing many stones and a grayish gelatinous fluid, but no bile. She made a good recovery both physically and mentally. This was thirteen years ago. She afterwards moved out West. A few months ago a well dressed handsome woman walked into my office and greeted me cordially. She introduced herself as Mrs. H. who had tried

to operate upon herself for gall bladder disease and to whom I was called to complete the operation. She was completely restored both mentally and physically.

Since the very beginning of medical history, medical minds have associated these depressive mental states with the liver, hence, the very ancient name hypochondriasis. This reminds me that when we read thoughtfully and meditatively ancient medical literature, we are impressed with the fact that, though groping in the dark, these early fathers often had a vision of truth. Most of the complex symptoms that they attributed to the liver, such as biliousness, indigestion, flatulence, bilious colic, etc., we now know are due to disease of the gall bladder and biliary tract.

It has not been possible in the scope of this paper to report in detail the many cases in our files bearing on focal infections. Neither has it been the purpose of this paper to enter into a scientific discussion of the subject, since such discussion would lead us away from the main purpose of the paper, which is to impress you with the importance of more careful consideration of gall bladder disease as a cause of many otherwise obscure conditions and to arouse the interest of the clinicians as well as the surgeons in the gall bladder as often a hidden and obscure focus of infection. The improved methods of X-ray and its better interpretation have discovered to us so many cases otherwise impossible to recognize. It is my opinion that no case of obscure origin has been thoroughly examined, that has not been subjected to X-ray study of the gall bladder. If this was thoroughly done, many sound teeth, healthy tonsils, healthy sinuses and normal appendices would be saved the desecration of their sanctuary.

Some of the statements in this paper may seem to some of you as extravagant, but they are none the less true and if I have succeeded in arousing your interest in the gall bladder as a very frequent offending organ, which you have so often overlooked, I have accomplished my purpose.

## "REFRACTION"\*

R. H. NEWMAN, M.D., Knoxville

**S**TUDYING the eye from an anatomic and physiologic standpoint, one cannot fail to be impressed by the arrangement whereby the eye is able to make an instantaneous picture showing form, color and perspective and, at the same time, transmit this to the brain, retaining a memory picture of varying intensity commensurate with the impression made at that time.

Studying the eye from a mechanical, engineering and refractive point of view, one realizes that the eye was not planned with a M. M. rule, the lens was not calibrated for width and thickness, neither were the curves of the lens and cornea accurately scribed in their various dimensions, nor are the intrinsic muscles of different eyes of the same strength. Nature in mass production has not produced eyes symmetrical one with the other, not even in the same person. The muscles controlling the movements of the eyes are often not properly balanced so as to give easy and comfortable binocular single vision. On account of these varying factors, refraction and the wearing of glasses to correct the subnormal eye is necessary.

The refraction of thousands of eyes under a cycloplegic shows that very few are absolutely emmetropic, although many are free from symptoms of eyestrain.

The eye physician far too often treats refraction as one of the minor parts of his profession, when really, actually and financially, it is one of the major parts.

I recently read in the American Journal of Ophthalmology where a surgeon has said his average fees were ten dollars, and an ophthalmologist with a large operative practice said his average fee was fifteen dollars. This may be a bit far-fetched, but I do know that refraction is lucrative and unlike surgical operations—satisfied pa-

tients are repeaters, as glasses must be changed every three to five years.

Patients coming for refraction and glasses ordinarily come for one of the following reasons, and the chief complaint can be classified in four groups:

1. Poor vision, no headache.
2. P. M. headache, good vision.
3. P. M. headache, poor vision.
4. Presbyopia.

We will take up the various procedures in refraction in the order in which I think they should come:

First, the history of the patient should be carefully taken, paying strict attention to the chief complaint and all symptoms referable to the eyes, not forgetting to go into the medical history of the patient, as many times in an eye examination masked internal medical conditions can be brought out. In the external examination of the eyes, note carefully any abnormal condition on your history sheet. The vision of each eye, separately, should be taken before any further examination which might interfere with obtaining accurate records of the patient's vision. The near point, or P. P., should be accurately determined, and for this purpose I use the charts of Oliver, which are printed with a strict observance of the 5 minute angle, as an ordinary Jaeger reading card contains only the different size prints as used in newspapers and other periodicals corresponding to the different fonts of type.

The near point convergent test should next be made. Then the ductions and M. B. at 6 M. and at 25 C. M. Following this, examination of the fundi should be made, noting any pathology or abnormalities found. If the examiner is skilled with the ophthalmoscope, the approximate error can be ascertained and recorded.

Evaluating the findings up to this point, sometimes patients with normal vision at 6 M. are using varying amounts of accommodation to produce this vision, in reality

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having more symptoms of eyestrain than patients with much poorer vision and being in need of a complete refraction and glasses. The near point often throws considerable light on this condition. A convenient scale to remember in taking the near point is that the normal near point is approximately  $\frac{1}{2}$  the patient's age in C. M., being slightly above this if over 40 years of age. The near point of convergence should never exceed 100 M. M.

At 20 years of age, 40 M. M.;

At 30 years of age, 70 M. M.;

At 40 years of age, 80 M. M.;

At 6 M. there should be not over 3 deg. of esophoria, not more than 2 deg. of exophoria, nor more than 1 deg. of hyperphoria.

At 25 C. M. the error should not exceed 6 deg. of exophoria, 1 deg. of esophoria or hyperphoria.

As a general rule, adduction should be twice the P. D. of abduction. Less than 4 P. D. of abduction means divergence insufficiency.

The next question confronting us is shall this refraction be made with or without cycloplegia?

In children, especially with squint, one should have absolute cycloplegia, which means atropin q. i. d. for three days. Young adults should have a cycloplegic, ordinarily homatropin, although the cycloplegia is not so complete; but only in exceptional cases will adults undergo the long, continued blurring which follows atropin.

In cases of marked accommodative spasm with fairly good vision and a far near point, one is justified in using scopolamine, which gives better cycloplegia and lasts only three or four days. Personally, I prefer in every case under 40 to do the refraction under a cycloplegic and retinoscopy. In cases approaching presbyopia, it is very important to get an accurate basic refraction as this is the foundation for the presbyopic correction.

I would much rather do a refraction with cycloplegic and retinoscopy than to do a manifest refraction. With a retinoscopy and M. B. accurately made, without a post cycloplegic test one can safely write the

prescription for glasses with more assurance than with the best manifest. The retinoscope is one of the most valuable instruments that we have in determining errors of refraction. With a dilated pupil, if one is proficient in the use of the retinoscope, you can absolutely measure the error of refraction, the astigmatic correction, and definitely locate the axis of this astigmatism. As an aid in definitely locating this axis, the axonometer is a very valuable adjunct to your equipment, in addition, it shuts off many of the peripheral rays of light from your retinoscope and results in less light irritation to the patient. The eye not under examination should be covered, this being absolutely necessary in cases of squint.

The value of the retinoscope cannot be overestimated in cases of nystagmus, young children, amblyopia, illiterates and the feeble-minded. This is an objective procedure, not subjective, and you are not dependent upon the incorrect, hesitating answers of the patient as to whether this lens is better or worse. When the eyes have returned to normal, the length of time depending upon the cycloplegic used, there should be a post cycloplegic test, the correction found at your retinoscopy should be placed before the eyes and this reduced to where it gives the best possible vision. The rule found in most textbooks reducing the total correction by minus 25 may work in some cases, but it has been my experience that there must be more of a reduction. The strength of the glasses prescribed at your post cycloplegic test is governed not only by the glasses producing the best vision, but by the M. B.

In esophoria, the patient should be given almost, if not all, of the full correction. Sometimes, in order to prevent annoying blurring of vision, atropin gr.  $\frac{1}{20}$  and water 1 oz. is dropped in the eyes t. i. d. to relieve the ciliary spasm.

In exophoria, the weakest possible correction should be given so as to stimulate accommodation and convergence.

All hyperopes should be given the weakest correction which will relieve their symptoms and give them good vision, leaving



them something for the muscles of accommodation to play with, and thereby preserving this accommodation as long as possible.

In esophoria, it is sometimes necessary to give an addition for reading.

Myopes should have practically their full correction, at the same time avoiding overcorrection, as overcorrection may make the eye hyperopic and stimulate accommodation, thereby producing a still farther lengthening of the eye, resulting in progressive myopia.

In the prescribing of glasses, as a general rule the full strength cylinder should be given, reducing the sphere with the minus lens to procure the best vision. Occasionally, in high degrees of astigmatism, it is necessary to slightly reduce the cylinder for patients who have not previously worn glasses.

Manifest refractions are sometimes necessary, especially in presbyopes, or in patients, in whom, after examining the fundi, you are suspicious of a latent glaucoma. In many of these older people, it is possible to do a retinoscopy unless the pupil is extremely contracted. An amber glass fitted in one cell of your trial frame will many times enable you to successfully do a retinoscopy on the undilated pupil. As for the manifest itself, you can take your choice between the fogging method with a retrograde refraction, or the ascending method.

The cross cylinder is invaluable to use in these cases to bring out astigmatic error, and locate its axis. If, after twenty minutes, you have not satisfied yourself with your correction, it is best to have the patient return for another sitting, as after twenty minutes the accommodation of the patient becomes inaccurate, their sense of discrimination blurred, and their answers very indefinite. Also, you will do a better refraction and, at the same time, impress your patient with the thoroughness of the examination.

The prescription of presbyopic glasses should never be made without first correcting the distant error, as this is the basis of all presbyopic corrections. If the distant glasses are correct, the addition of +1.00 or +2.00 to each eye should give the

same focal distance in each eye. If not, recheck your distant correction. It is rarely necessary to add lens of unequal strength for reading. This distance should be, ordinarily, 33 C. M., depending upon the height of the patient sitting down and the purpose for which the glasses are to be used. This is very important. Still more accurate in determining the proper strength of the addition is to prescribe a glass which blurs in each eye at exactly 25 C. M. This is more accurate than measuring the point where the small type is best seen.

If your previous examination has shown muscular imbalance at 6 M., the M. B. at 33 C. M. should be made, wearing the correction, and if the correction exceeds 10 P. D. of exophoria, the reading correction should be reduced or, if it is very marked, base in prisms should be used to produce the desired correction.

The prescribing of prisms for constant wear should be the last resort excepting in cases of vertical imbalance. The glasses should be prescribed as above stated with reference to existing esophoria and exophoria, considering at all times divergence and convergence, excess and insufficiency. In many of the cases of horizontal muscle imbalance, prism exercises can be used to a great advantage, and many times themselves overcome the error by properly developing the muscle balance.

The Wells Phorometer attachment for exercising the muscles is very useful. Also, the exercising with prisms at varying distances can accomplish a great deal. I think, however, that this phase of refraction has been very much neglected.

In cases of vertical imbalance, very little can be accomplished by prism exercises. These must be corrected by prisms. The wearing of prisms does not correct the condition. It merely acts as a crutch and alleviates the symptoms. Many times stronger prisms must be added from time to time.

A good rule to remember in regard to prisms is when the eyes have a tendency to turn in, the prism is prescribed base out.

When the eyes turn out, the prism is prescribed base in.

In vertical imbalance, the prism is pre-

scribed base down before the hyperphoric eye. Just the reverse of this is used for prism exercises.

In all cases the prism should be divided between the two eyes.

I shall not go farther into the question of prisms and muscle imbalance as that is a paper within itself.

After the final examination is made and the prescription for glasses given, one should have the patient return for a checking up of the glasses as to strength, the proper fitting, proper center, and the distance from the eyes.

Manufacturing opticians are not infallible and you may find that an error has been made in the filling of the prescription, or possibly you have made an error in writing the prescription, using the wrong sign before the strength of the glass. If the patient should complain of slight blurring in wearing the new glasses, a drop of homatropin in each eye, with the instruction to wear the glasses constantly, will often allow the eyes to accommodate themselves to the new glasses and will give added comfort.

Patients wearing bifocals for the first time should be instructed that the act of vision is an automatic procedure, and that their trouble will soon be overcome if they persist in wearing the glasses, and that a very short period of discomfort is much more desirable than being worried with two pairs of glasses for life.

People who are old, unsteady, or feeble from any cause, who have never worn bifocals, should not be given bifocals. Some types of nervous people will never wear them, and for them bifocals should not be prescribed.

Taking it all in all, to your knowledge of physiological optics and the technique of refraction must be added a third factor—your ability to assemble these different facts and make them conform to the different personalities for which glasses are being prescribed.

#### DISCUSSION

DR. ROBERT J. WARNER (Nashville): The essayist has given us an excellent routine for refractions. Many cases of latent hyperopia in beginning presbyopes can be detected by the use of mydriatics, and I use homatropine in many

cases past forty years of age. Of course a miotic is instilled after the refraction.

Patients who have been wearing bifocal lens with comfort and need a slight increase in their reading lens, I always prescribe the same type bifocal lens that they have been wearing, but recently I have had cases using some of the newer types of bifocal lens with discomfort and upon examination no error could be found in their old refraction. In such cases I have gotten good results by prescribing the Ultex A seg. This lens, in my experience, is a great deal more comfortable than some of the newer type segs.

We have been receiving a great deal of literature upon the corrected curved lens. This no doubt is an advantage in the stronger lens, but I can see no advantage of the corrected curved lens in small errors. Cylinders should never be prescribed in round lens that are to be used in frames with rims, as the lens become loose in the rims and will turn to a different axis than that which was ordered.

DR. ERNEST WHITE PATTON (Chattanooga): I want to congratulate Doctor Newman on presenting this paper. In my opinion refraction is one of the most, if not *the* most important part of our daily work.

So very many complaints, not only of the head, but of the entire body manifest themselves in some form of eye disturbances, that one who neglects careful refraction is not doing his full duty to his patient.

I would like to emphasize the importance of a careful history. As you very well know this is very important in any physical ailment, but it is particularly important in eye troubles, because so many eye complaints are secondary to other troubles.

Many are the patients who come to you with their own diagnosis, they need glasses; so often the mother brings the child to you with the complaint the child is not doing well in school and the school doctor said Johnnie needs glasses, when as a matter of fact all that Johnnie needed was removal of his tonsils and adenoids and the eye complaint vanishes.

One other point on which I want to agree with Doctor Newman most heartily, except for any age limit, that is no refraction can be considered accurate without a cycloplegic.

Of course we know there are contraindications to the use of a cycloplegic and that in a great many cases after certain age limits we use our own judgment in the form of a guess and most often the guess is all right, but to be exact we must put at rest the involuntary muscles before we can know precisely what is being done by those muscles.

I know we have some very good men in our field that do not consider a cycloplegic necessary, but I cannot understand their ideas.

If a thorough static refraction is made, then a careful post-cycloplegic examination follows, one



is in a position to prescribe wisely. Not always is it necessary to do a post examination and I am fully aware of the fact that in many cases the remuneration cannot be in proportion to the time and care taken, but the satisfaction of work well done, plus the praise of a happy patient is quite enough.

DR. J. D. CARLTON (Union City): It seems to me that one goes through three stages or maybe three ages in learning to fit glasses. Perhaps he does the same thing in other specialties. These three are, first, the simple or ignorant stage, full of the bliss of new-found knowledge; second, the elaborate stage, due to expanding knowledge and third, the simple, or simplified stage, due to better understanding and to valuable experience.

Dr. Newman has included every important phase of his subject leaving only the matter of impressing certain details or of enlarging points touched upon.

Among these details well worth impressing is always to remember we are dealing with something very much alive and on the job when we "test" a pair of eyes, and two things almost as famous for trouble as the classical Katzenjammer twins are those other twins, Accommodation and Convergence. I might venture also to emphasize that relief by whatever means possible of the burdens on these two functions, accommodation and convergence, is of great importance. This suggests the point that acuity of vision in prescribing glasses is not primary but secondary and must at times be sacrificed temporarily if necessary to induce relaxation of these. A useful thing to keep in mind is that hyperopes are much more numerous than myopes as well as much greater sufferers, and one may find that symptoms of hyperopia as a diagnostic aid are more reliable in differentiating between hyperopia and myopia of low degree than cycloplegics.

The use of cycloplegics is adequately suggested in the doctor's paper, but of course he expects us all to know many things about this, as about other matters, which he does not have time to put in. One is that it often takes quite a bit of persuasion to induce a patient to wear his glasses, especially the hyperope. Cycloplegics are not so practical to be used very long as an aid to relaxation of accommodative spasm or latent error, habit, or whatever you call it; and the practice of scaling down your prescriptions a certain percentage seems to me to show a lack of reliance on your cycloplegic. I do not think it necessary as a rule except as a concession to the patient.

The frankness and sincerity of Dr. Newman in his essay, is, next to his clearness, most refreshing. Most of us would be hard hit if refraction were taken out of our practice. I am glad he gives it its rightful place.

As to the phorias I gather the essayist depends mainly on the careful giving of glasses for the patient's spherical and cylindrical errors, and it is perhaps true that it is safer to do this. I feel

sure, however, after many years of prejudice and strict avoidance of prisms, that they have a valuable place in many cases.

Dr. Newman does not stress instruments and I hope you all will like this for it seems to me a significant thing as differentiating the eye physician from the optometrist and also to suggest that there must be more equipment in his head than in a doctor's refraction rooms, and even though no one despises a proper means of making a good impression the legitimate practitioner must perforce console himself with less obvious ways of impressing his clients, such, for instance, as letting his work speak for him. One thing especially I am sure we need better to combat our friend, the optometrist, is a higher mechanical skill so a good refraction will not be spoiled by uncomfortable mountings.

Emphasis of high points in his paper is all that seems to me required in Dr. Newman's treatise. Differences in methods and opinions exist in this as in all other topics, but the ground is covered very thoroughly. Dr. Newman very properly climaxes the paper by stressing that very important thing which alone makes all of one's knowledge and science useful and effective, namely, judgment; judgment in selecting, choosing and applying the best procedure to the case in hand.

E. C. ELLETT (Memphis): I was impressed with what Dr. Stanford said this morning to the effect that to do good refraction one must not look on it as drudgery, but really like it. I would add that it deserves the same careful attention that a delicate piece of surgery does and that we should feel the same pride in doing it correctly. Some men do very good refraction without cycloplegics, and certainly some men do it much better than others, but if you will go over your cases as carefully as possible without this aid and then refract them under cycloplegia, you will learn something to your advantage. We should be careful to use the drops in such way as to really secure cycloplegia. I think if the refraction is carefully done, the prescription of glasses intelligently decided and the frame accurately and properly adjusted that most of our muscle problems will disappear and prisms, exercises, etc., be rarely needed.

My experience leads me to think that a greater reading distance than 33 c.m. is more agreeable to most patients, and would suggest 36 c.m. or more, i.e., an addition of not more than +2.50 D.

The first interview with the patient is very important when you try to gain his confidence and interest yourself in his problems and exactly what it is of which he complains. In this, as in other ailments, a good history is a great contribution to a successful diagnosis and treatment.

One should have the necessary outfit, and of the best quality, but after all the thing that makes successful refraction is what is in the head and heart of the doctor and is not composed of a lot of elaborate nickel-plated equipment.



## OPEN TREATMENT OF FRACTURES OF THE FACE\*

JOHN J. SHEA, M.D., Memphis

THE MANAGEMENT of fractures involving the paranasal sinuses is similar to the surgical procedures followed in radical sinus surgery. In fact the most common complication of the fractures is sinusitis.

The majority of the cases fall into the hands of the general surgeon, who unaccustomed to sinus procedures is unable to render the proper surgical care. The majority of the fractures of the facial bones exclusive of the simple nasal bone fractures extend into the maxillary, frontal or ethmoidal sinus. The sinus involved fills with blood, which readily becomes infected. The basis of treatment is the replacement of the bony fragments, and the drainage of the sinus entered. This will restore the features.

The face is made up of an upper and lower jaw. The upper jaw may be likened to two churches with steeples having two keystones interposed between them. The superior maxilla with their nasal processes are the churches and the nasal bones are the keystones. The malar bones are the lateral supports. This formation is loosely attached to the skull and capable of withstanding great force exerted at it in a straight direction, but very vulnerable to forces from the side or from below. Explosion which enters the nose or mouth readily displaces the facial bones from the skull without fracturing the skull. The lower jaw can withstand blows of great force from the side or below without fracturing, whereas, a blow of equal force from in front may fracture the lower jaw. The majority of displacements are at the site of sutures.

### EXTERNAL NOSE

The anterior position of the nose exposes it to injury and deformities of it are noticeable and detracting. Individuals with badly shaped nose become conscious of their de-

formity and many suffer inferior complexes because they are constantly accusing their listeners of observing their nasal blemish, instead of being attentive to their discourse. The external nose consists of a bony and a cartilaginous portion. The attachment of the cartilages to the bony base may be easily separated. The reattachment is maintained in a good position by a light intranasal pack for two days and a light adhesive dressing externally for a week or ten days. The fractures of the bony external nose are the most frequent of the facial fractures. The deformity depends on the line of force which was applied. When the force is lateral, the approximate nasal bone is displaced under its mate and if the force was sufficient, the nasal process of the superior maxilla is cracked and depressed, the septum being deflected.

The correction demands the application of the law of physics—"two objects cannot occupy the same position in space at the same time." The depressed nasal process and nasal bone are first elevated, then force is applied to the opposite side of the nose by a blow of sufficient power to knock the displaced bones into their normal position. A wooden protector for the nose is used as a guard and a small metal nasal hammer as the instrument of force. If the case is seen early, this can be accomplished under local anesthesia, but it is best to administer a general anesthetic, as better results are obtained. The best outer dressing is made of Kerr's dental wax, which will mold to fit the nose. It is fixed with adhesive plaster to the forehead and several adhesive strips over the nose. Metal external splints or mechanical appliances may be used.

There is a variety of nasal fracture, the result of force directed from in front, which depresses inwardly both nasal bones and rotates outwardly one or both nasal processes of the two superior maxilla. This injury is easily produced by "brass knucks." The deformity is characteristic. The nose is very broad, being spread all over the face.

\*Read before the Tennessee Academy of Ophthalmology and Otolaryngology, Nashville, April 10, 1933.

The bridge is sunken. On palpation the nasal process of either or both maxilla will be found to conform with the above description. The correction of this fracture requires a partial open operation. An incision is made within the nose to expose the nasal process. With a small saw, the process is sawed through along its base, being careful not to injure the contents of the orbit or the lachrymal apparatus. The nasal bones are elevated by force. At times they have to be rocked free of their impaction into the frontal bone. A sharp blow with force directed laterally will rotate the nasal process toward the median line. This procedure reduces the broadened base of the nose. The septum deflection will require a submucous resection to release the parts of the fracture that is old or to improve the breathing space. The nose is packed and a mechanical appliance is applied to hold the process in position. The administration of calcium will aid in the control of the swelling.

I have seen but once in private practice the opposite deformity, that is, when the nasal bones were displaced outwardly. This occurred in a young instructor of a Girls' Scout Camp. A delayed explosion of a bomb caught her while inspecting the dud. The force of the explosion struck her from below and went up her nasal passages and blew out the front of her nose. Her deformity was like an exploded firecracker. Our nasal problem here was to depress the nasal bones and to rotate inwardly the nasal processes. There was considerable loss of the cartilaginous portion and several operations were necessary to rebuild her nasal vestibles.

### PREEXISTING DEFORMITIES

Preexisting deformities can be corrected if care is attended the setting of the new fracture. Many noses are of better shape after a proper reduction than they were before the injury.

### MALAR BONES

Blows received in fighting, falling or being forcibly thrown forward during a collision usually land on the malar prominence, which is easily displaced. The malar bone may be displaced forward, backward, in-

ward, or outward, and these displacements can be readily felt on palpation. In any event its articulations are severed. The bone comprising the external and posterior surfaces of the superior maxilla is thinner than that of the malar process, and crushes after the fashion of an eggshell. At times this irregular fracture will start at the inferior margin of the orbit and circle around the base of the malar process, ending at the junction of the posterior wall and the palate bone. This type of injury tears the antral membrane, and its cavity fills with blood.

A roentgenogram of a typical case will present a cloudy antrum on the injured side and an inward or outward rotation of the malar bone, with a change in the transverse diameter of the corresponding orbit.

A study of the normal orbit in the routine postero-anterior sinus film will show a line in the outer third made by the junction of the outer orbital wall and the skull. This line bears a constant relationship to the outer rim of the orbit and may be used to determine whether or not the malar bone has been displaced. The transverse diameter of the orbit is altered in these fractures, being increased in case of outward displacement and decreased in crushing injuries in which the malar is rotated inwardly. This relationship and diameter are controls, available for use in determining the correct position of the parts after the resetting of the fractures.

The malar bone and the firm bone composing the malar process of the superior maxilla are displaced in the direction of the force. The articulations of the malar give away with a resulting separation of it from the frontal, the temporal and the superior maxilla. At times the fracture extends forward into the ethmoidal cells. These cases present a typical deformity, the malar region being depressed.

Gill has suggested the use of special forceps similar to large towel forceps to reduce malar displacements. The bone is grasped through the skin, and traction is applied with palpitation as a guide. If successful, this method is safe and simple and leaves no scar, and the absence of an open wound reduces the possibility of infection. If the antral wall is badly depressed, the



force exerted to replace the fragments must be intra-antral. A very simple method is to make a naso-antral window under the inferior turbinate and insert a number seven (7) Ritter sound. With one hand external for palpitation, the sound can be guided in the elevation of the fragments into their places. A rubber tube passed through the window into the antrum will serve as drainage and by anchoring it into the nasal vestibule will serve as a prop to hold up the depressed malar process. If the anterior wall is badly comminuted, I prefer doing an open operation. The usual buccal approach of the antrum is made and the fragments are studied. Those which can be retained are replaced into their proper position and the other removed. The muscular attachments to the fragments are capable of preventing their free manipulation and at times have to be separated before a satisfactory reduction can be obtained. Packing is seldom needed, but drainage should be maintained.

A blow struck with horizontal force against the front of the upper jaw will produce a transverse fracture of the superior maxilla and at times inflict an injury to both maxillae. This fracture presents a characteristic change in the features of the person injured: the upper teeth drop down on the lower jaw, elongating the features, producing the so-called "Horse Face." At times this fracture extends into the nose and mouth. One of my patients suffered such an accident by having his head jammed between the floor of a freight elevator and a half gate. The ramus of the inferior maxilla may sustain a sudden strain, and often snap, with an added downward displacement of the lower teeth. These cases demand immediate reduction, care being used to obtain a good apposition of the teeth. The lower jaw fracture should be reduced and anchored in position. These fractures are seldom single and each case is a rule unto itself, but immobilization should be started to a solid base. The skull cap can be encased in plaster, and supports anchored into the plaster. From these fixed supports, other supports or appliances should extend to the fractured parts. If there are multiple fractures involving the

upper and lower jaws, it is necessary to wire the jaws in position. This is important to assure a free and unlimited movement of the lower jaw after the fractures have healed.

I saw a man who had a locked jaw due to the neglect of not having the alveolar processes slid forward into their natural position, and the resulting vicious union locked the lower jaw. When first seen by me, he could separate his gums less than an inch. I had to separate the old fracture and displace forward the upper alveolar processes and hard palate. Unfortunately, in this case the ramus of the jaw on the left side had been fractured at the time of the injury, and being unrecognized had healed in a bad position, leaving him with a limited motion of the lower jaw.

The after-care of the open case is the same as after a radical antral operation. The patient should be instructed to report back whenever he contracts a head cold, and the local condition should be treated to avoid a sinus infection. These sinuses have sustained a permanent injury and are now more subject to infection than before the accident. Furthermore, the infection readily escapes through into the soft tissues, and adequate drainage should be maintained. If there has been a through and through wound of the cheek, it is best to close tight the mucous membrane and drain the skin wound.

Roberts has suggested the elevation of the depressed malar bone by the use of an instrument like a screw porte. Through a small skin incision the malar bone is bored into and with traction the bone is elevated into place. Gillies uses for this same deformity an elevator which he passes down under the depressed bone and elevates the fragments. His incision is made in the skin at the hair line and dissected down through the temporal fascia.

### ZYGOMATIC FRACTURES

These same manipulations are applicable to the depressed fractures of the zygomatic arch. Matas many years ago suggested an unique reduction of zygomatic fractures, by passing a piece of silver wire from above under the depressed bone and out again be-



low the arch. Traction on the wire reduces the fracture. If necessary the wire can be fixed to an external support in cases that tend to reoccur.

### FRONTAL SINUS

Perforating fractures are more common in frontal sinus injuries than in maxillary fractures. It requires force and velocity to penetrate the thick outer wall of the frontal sinus, and fortunately its thin inferior surface is protected. The management of the frontal sinus fractures depends on whether the fracture involves the outer and inner walls or just the outer wall. If the fracture does not include an injury to the inner wall, drainage by the natural route through the nasofrontal duct will suffice. The external wound should be cleansed, and all loose bone removed. It may be closed with minimum drainage. The bony wall is readily palpated and any displacement easily adjusted. It is seldom necessary to enlarge the soft tissue opening to reduce these fractures. The nasal membrane is entitled to the same attention as during an acute frontal sinusitis to secure free drainage of the sinus by way of the frontal duct.

Should the frontal duct prove inadequate, the drainage will back out of the wound. This promptly becomes evident. When the inner or cranial wall is injured, an open inspection with external drainage is preferred by most surgeons. The wound through the outer wall is enlarged, and sufficient membrane is stripped off the inner wall to expose the fracture of the inner table. If the bone is depressed it should be elevated, and should there be an aperture in the inner wall it may be enlarged to expose the dura. External drainage is continued through a rubber tube until the discharge has ceased. If the dura is torn, it is mended, and for this some surgeons use "dead dura" or fascia lata. Every effort should be made to prevent the frontal sinus mucous membrane from invaginating into the fracture, as there is great danger that there will remain a potential fissure, through which future infections may penetrate into the cranial cavity.

Severe blows exerted in a glancing direction from above onto the forehead or from

the side striking the under surface of the malar process will separate the face from the skull. The line of fracture often extends across the anterior wall of both frontal sinuses, and in one of our cases it was necessary to wire in position the anterior wall of the right frontal sinus to the skull and to wire the outer angle of the orbital rim to the outer wall of the orbit.

### ETHMOID CELLS

Perforated wounds, as made by bullets, through the orbit often penetrate into the ethmoid cells. Their management should include thorough cleansing of the external wound and the nasal cavities. The majority of these wounds heal readily with little or no deformity. Occasionally they will be followed by adhesions along the tract of the bullet within the nose, or a small shot may lodge in the ethmoid mass.

### SPHENOIDAL SINUS

Fractures involving the sphenoidal sinus are fortunately rare, but their care should be along the same lines of common sense as in ethmoidal fractures.

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### DISCUSSION

DR. EUGENE ORR (Nashville): Dr. Shea has presented a very timely subject and covered it thoroughly.

Certainly since the advent of automobiles there are a great many more of these fractures than there were during the horse and buggy era.

In many instances these fractures are associated with fractured skulls, internal injuries, extreme shock, et cetera; so that the treatment of the fracture of the bones of the face often becomes of secondary importance. The reduction of these fractures should be attempted only so soon as the condition of the patient justifies.

In fractures, other than perforating fractures, involving the sinuses, we are inclined at least to a certain extent to disregard the sinuses, except we do institute the same line of treatment which we follow in acute sinusitis.

We feel that if the features are restored, the essential bones in correct position and the teeth in occlusion, then the fractures have been reduced and the sinuses will take care of themselves.

In a few instances it has been necessary to do an external sinus operation later on, and in most of these, loose bone was found within the sinus.

In one so operated, an abscess was located outside the sinus draining into it.

It has been our policy to refer fractures of the maxillae to the oral surgeon.

Dr. Morgan, who is to enter this discussion, has done some extremely interesting work along this line.

Should I have a depressed fracture of the anterior antral wall, I would try the method suggested by Dr. Shea, namely: elevation by a sound through naso-antral opening.

The nose being the most prominent part of the face is the most often fractured.

One of the most serious complications, fortunately not often seen, is hematoma of the septum. I insist that these people be examined daily for the first few days.

Dr. Shea has outlined a plan for the reduction of these fractures to which I have nothing to add. Some of these fractures are extremely complicated and tax one's ingenuity as to reduction and maintenance of same.

Fortunately most of the fractures of the nose are of the simple and uncomplicated type, and it is my belief that a simple fracture of the nose which is properly reduced will stay reduced.

The nose has wonderful recuperative powers, doubtless you have heard of the man who had his nose cut off and who picked it up and stuck it back on and it stayed stuck.

A light intranasal packing is at times advantageous; but to my way of thinking, the external dressings, be they made of dental wax, adhesive plaster or what not, more often serve as a facial ornament than for any useful purpose.

DR. H. E. CHRISTENBERRY (Knoxville): As usual Dr. Shea has most carefully and thoroughly covered his subject and there is not much left for one to add in the way of discussion. Our methods of handling may differ somewhat but end results are what we want, and that is, proper replacement of fractured parts, avoiding deformity and infection if possible.

One has to approach many of these fractures about the face from a different angle to what he has others. Good mechanics comes in very useful as many of our present injuries call for new thought and procedure. Reducing our fractures are not near the nightmare as the danger of infection. We cannot take too much care in trying to prevent infection. In injuries involving the sinuses too often infection is present already. Realizing this one can do much toward preventing serious complications by immediately instituting heroic treatment both local and constitutional.

Splints: After the fracture has been properly reduced the next thing is to find and apply the

kind of splint that will serve best to hold parts in place so as to give best end results. In fractures of the nose some prefer dental wax as does the essayist and others prefer metal splints. Personally I have had better results by the use of metal splints cut out and molded to fit each case. They are not so bulky and I find them more easily held in place. In fractures of the mandible, especially where the surgeon sees them after much swelling has taken place, a most simple and surprisingly successful method in treating these cases is the use of an elastic band made with rubber dam usually folded to make two layers thick and wide enough to support mandible and submandibular structures and encompass the chin. This is fastened to a skull cap allowed to remain on and kept in position for three or four days. At which time the swelling is usually reduced so one can proceed with further surgery and treatment if necessary but it is surprising the good results can be had with this traction method. By this method you can have free access to the mouth, permitting physiologic, prophylactic and surgical care.

In fractures of the maxilla a Kingsley splint as described and modified by Marshall is usually the most satisfactory as it can be attached to a skull cap and constant traction can be maintained by rubber bands. Kingsley splint can be adjusted in such a manner so as to support the fractured upper jaw without restricting movement of the jaw. It has the additional advantage of permitting constant observation, cleansing and local treatment of the parts as well as freedom in taking food.

In any fracture which involves the alveolar process and teeth it is imperative that complete and as near perfect reduction as is possible is absolutely necessary in order to avoid a traumatic occlusion which is likely to produce a disturbance of the supporting tissues of the teeth resulting in a pyorrhea condition with the loss of the teeth. Everything possible should be done to obtain perfect occlusion. The assistance and cooperation of an oral surgeon can be a great help in many of these cases.

The use of calcium as mentioned by the essayist is a great adjunct in the treatment in many of our fractures about the face especially where there is an injury to the nose where the swelling blocks the air passages and interferes with aeration and drainage.

May I conclude by saying that I have greatly enjoyed Dr. Shea's paper as it is most timely and valuable.

DR. W. LIKELY SIMPSON emphasized the importance of these cases being treated by the rhinologist with the earliest possible replacement of bone and soft parts with drainage when necessary, when packing is necessary iodoform gauze should be used, if the skin sutures are necessary horse hair or dermol should be used, and the sutures should be removed in twenty-four hours.

Probably the best procedure is to administer a general anesthetic in practically all cases. As



a general thing I would not operate on preexisting deformities at the time of the correction of a recent fracture. It seems to me in the milder cases of malar fracture that external manipulations or manipulation by means of the inferior meatus through the antrum is practical, but in quite a high percentage of these cases, especially if the fracture is badly depressed and rather far externally, that an open operation either through the skin or through the mouth by way of anterior wall of the antrum is indicated.

As Dr. Shea said, the transversed fracture of both superior maxillae presents a very characteristic appearance. I recently had a case of a man who was riding in an automobile and ran head-on in the dark into a load of lumber. One of the timbers striking both upper maxillae and giving a transversed fracture just above the alveolar processes.

Such cases as these are very trying, often very complicated, necessitating the cooperation of the dentist, and complete immobilization of the upper and lower jaw, etc.

In fractures of the frontal sinus, involving only the outer wall, the external wound should be cleansed and any loose bone removed, and any depressed bone replaced. As a general rule an external drainage would be indicated, not depending entirely on the intranasal drainage, especially if there has been considerable trauma of the mucous membrane, etc., of the frontal.

If the posterior wall of the frontal has been injured, sufficient exposure so that it can be thoroughly studied is indicated. Of course depressed posterior walls should be replaced, and if there is any doubt about the dura being injured, it seems to me the bone should be removed so a thorough examination can be made. One is probably not any more likely to have complications by uncovering the dura of the posterior wall of the frontal than that of the mastoid region, except that, as Dr. Shea said, one should prevent invagination of the mucous membrane, if possible.

Injuries of the ethmoid cells give very little or any trouble unless the cribriform area is encroached upon.

DR. WALTER M. MORGAN (Nashville): When the opportunity came to me to participate in the discussion of Dr. Shea's excellent and timely paper, I readily accepted, though I am not unmindful of my limitations to discuss the paper as a whole. I have been intensely interested in injuries of the bones of the face, and have been treating cases involving fractures of the maxillary bones for a number of years. It was with reference to the treatment of this particular type of injury that the invitation was extended to me to be present today; so I will confine my remarks to these bones, and particularly the superior maxillary bones.

I am of the opinion that the injuries to the bones of the face are increasing and that such cases will be on the increase or decrease in accordance with the increase or decrease of automobile accidents. The underlying cause is the high cows

as built into the body construction of our modern automobile. The precipitating cause, the sudden contact of a fast moving object with an immovable one, which in turn catapults the occupant or occupants forward and into the dashboard of the machine, which dashboard today is at the proper elevation to receive the face of the individual or individuals as they are thrown forward. As a rule those who receive an injury of this type are the occupants of the front seat.

In a series of 23 cases with injuries to the maxillary bones, 11 were caused by automobile accidents. The remaining 12 cases were due to the causes as of old, namely, fights, falls, gunshot wounds, horse kicks, etc. This will lead one to the conclusion that the automobile is merely an added hazard to the possible cause of injuries to the bones of the face and also that it is by far the most frequent cause.

I am also of the opinion that injuries of this type are more severe than formerly encountered. Likewise they are more difficult to treat.

In past years it was usual to have presented a unilateral or bilateral fracture of the mandible, compounded into the mouth and with little displacement of the parts. Infrequently it was compounded externally. Today it is almost universal to find even in this type of case that it is compounded both within the mouth and externally and with marked displacement present. Today the number of bones fractured and presented usually range from 4 to more.

In the series, nine cases involved fractures of the superior maxillary bones with other bones of the face injured in some instances. The fracture of the superior maxillary bones was bilateral in 7 cases and unilateral in only 2.

Claus. Bi.	Baseball uni.	Huntington. Bi.
Highland 13.	Odil Bi.	Mule Bi.
Myers. Bi.	Pulaski. Bi.	Dynamite. Bi.

In the more severely injured it is next to the impossible to accurately determine the full extent of the fractures though possible to make a diagnosis of sufficient accuracy to successfully treat. Our chief diagnostic aids are unnatural mobility and the loss of normal occlusion of the teeth. X-ray pictures should be taken but preferably stereoscopic pictures made. More detail is thus obtained, and at that, unless the roentgenologist is quite familiar with the case, a negative report is more often returned than one with the fracture lines properly placed. This is due to the anatomy of the parts involved and merely stresses the limitations of the negative as a diagnostic aid in injuries of this type. In the treatment of fractures of the mandible, the story is quite different and the X-ray picture is of inestimable value.

The treatment of these cases is of course reduction and immobilization, just as with any other fracture. Points to be considered are:

No. 1—A good *functional* result.

No. 2—A good *cosmetic* result.

My preference for this sequence is, first, that the maxillary bones have a very definite function

and deserve equally as much consideration when fractured as an arm or leg should receive when fractured. Second where plastic surgery is necessary, it offers more to an individual when the underlying structure is in as near normal position as possible and is simplified.

### DIAGNOSIS

In fractures of the maxillary bones the symptoms of fracture, namely crepitus, luxation and unnatural mobility are not always present, as very often we have an impacted fracture, and often with little displacement presented. The X-ray will be of no aid in this type of injury. Therefore, to make the diagnosis and to reduce the fracture we are forced to turn to the normal occlusion of the teeth for our diagnosis. This is our best guide in diagnosis with all fractures of the maxillary bones, and the return of the teeth to normal occlusion is our best guide in reduction. Again I stress the point of function of the maxillary bones, and call your attention to the embarrassing position one might find himself in should he treat a case of this type with the result being the loss of function.

Place the teeth in normal occlusion and you will have obtained as near perfect reduction of your fracture as is possible to obtain. The exception is the fracture of the nasal bones or depressed fractures, and these are not often met with in injuries of the type I am discussing. It has been my experience that where the force has been of sufficient violence to fracture the superior maxillary bones and to depress the bones of the face there has been little need for surgical assistance.

The earlier the fracture is reduced the less complicated the reduction and in so doing you minimize the possibilities of complications.

Complications following fractures of the superior maxillary bones are rare even though compounded into the mouth, maxillary sinuses, frontal sinuses or ethmoids. In the nine cases referred to complications necessitating surgical assistance was necessary in only one. This occurred with a patient of Dr. Orr's and he can report his findings in this case better than I.

There are many obstacles to overcome in the treatment of these cases. In an effort to overcome these obstacles I have devised a splint of my own, and can say, while I have used it on only four cases, that my results have been most gratifying. With the aid of the lantern I will illustrate its use and advantages. And as I have mentioned injuries to the soft tissues, if time permits, Mr. President, I would like to show you slides of two other cases—one set of slides to illustrate the results following improper care to both bone and soft tissues following a gunshot wound of the face, and a second set of slides to illustrate a very extensive gunshot wound of the face undergoing treatment with consideration being given to both function of the maxillary bones and care of soft tissues. While these are extreme cases, and unusual, they beautifully illustrate points I have stressed in my discussion.

DR. STEWART LAWMILL (Chattanooga):

Since the advent of many automobiles, fractures of the face have become very prevalent indeed, and are becoming more so every day. Fractures, almost without exception, involve the sinuses, and we as specialists, with our better knowledge of the intimate structure of these sinuses, should be better equipped to treat these fractures than the general surgeons who are prone to neglect proper handling of these cases many times.

I recently had referred to me a case of impacted fracture of the antrum which a general surgeon had completely overlooked. These fractures are often very disfiguring, but as a rule can be completely reduced by the open method. In all of these cases where the sinuses are fractured there is always blood and sometimes sequestra of varying sizes within the sinus. If these sinuses are not opened and the sequestrum and blood evacuated, healing will be very much delayed. For reducing these fractures of the antrum I have made the incision as for a Caldwell-Luc operation, cleaning out the contents of the antrum as indicated and inserting a heavily curved antrum rasp wrapped in cotton through the canine fossa incision, and by strong traction have been able to reduce every one so far.

I recently had a case where a man was repairing an automobile tire and the iron rim blew off striking him over the bridge of the nose and fractured both superior maxilla, as well as the nose. The upper jaw could be moved in an up and down direction the same as if there were a mandibular joint on it.

"Horse face" is a good term for this fracture since it describes the appearance so well. This case did not show any improvement until both antra were opened through the canine fossa and several sequestra removed.

Doctor Shea's paper has been very interesting and timely and we should all be better prepared to handle these fracture cases after hearing him.

DR. R. G. REAVES (Knoxville): Dr. Shea has given us an interesting paper. I would just like to make a few remarks on the fracture of the malar bone.

Dr. Shea said the most frequent cause of the injury to the face was automobile accidents. In the last eighteen months I have seen four fractures of the malar bone, one caused by automobile accident, two by cows, and one by fight over some cattle. Three of these were very bad deformities. One being in a very old man I did not advise operation. In two cases I made an external incision in the cheek in line with the outer canthus of the eye. Through a very small incision I attempted to use the Roberts screw, unsuccessfully. I then took a small mastoid gouge and bored directly through to the antrum. I then took a tonsil expressor which has a right angle, passed it through the opening and pulled the bone back into place, getting almost perfect result, scar being almost invisible. I also made an intranasal antrum window under the inferior turbinate. The right angle hook enables one to put the smaller fragments of bone back into their position.



# THE JOURNAL

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H. H. SHOULDERS, M.D., Editor and Secretary

JANUARY, 1934

## EDITORIAL

### RED MEDICINE

The following statement with reference to a book, entitled "Red Medicine," published by Doubleday, Doran Co., appeared in a recent issue of the weekly magazine, "Time the Weekly Newsmagazine" (Vol. XXII, No. 25, December 18, 1933). "Time" very graciously consented to this reproduction of the statement:

### SOCIALIZED SERVICE

U. S. doctors last week received a close-up report on state Medicine in finest flower. Although the reporters, slim Sir Arthur Newsholme of England and portly Secretary John Adams Kingsbury of the U. S. Milbank Memorial Fund, were biased in favor of state conduct of medicine in general when they visited Russia last year, they were willing to find faults. They found few, they report in *Red Medicine*.<sup>\*</sup> Those few are mainly due, they believe, to the vast territory and population which Soviet State medicine is trying to cover. Principal findings:

The indisputable right-of-way through Soviet life belongs to the production of farm goods, industrial goods and children. When a child succeeds in getting born his after-care is guaranteed by the state. Mothers are encouraged to have their children nurtured and trained by the state. Working women, and 70 per cent of Soviet women between the ages of 18 and 45 do work, place their children in day nurseries. Among the Soviets these institutions serve as quotidian orphan asylums. When a woman brings her child to a nursery for keeping while she works, the child is given a physical examination, a bath and a clean uniform. If ill in any way, the child is segregated. All the children have individual towels, drinking cups, tooth brushes. All are taught young how to care for themselves. In 1932, there were 3,000,000 Russian children in such nurseries. Concerning this system the reporters comment: "In a good home in

which a mother gives intelligent as well as loving care she gives more than can be obtained in full measure otherwise. . . . In the present circumstances of Russia, including not only the industrial occupation of mothers, but the defective housing conditions, [nurseries] undoubtedly are doing highly beneficent work."

A woman need have no more than one child unless she wants to. Except for her first pregnancy, she may have an abortion performed at any time during the first two and a half months of term. Curetting without anesthesia is preferred to drugs. The doctor "is recommended to discourage a woman from abortion if there are no social, economic or medical reasons for it, and particularly if she has fewer than three children, or has adequate means for supporting another child." Usually there is no charge for the abortion, or at the most 40 rubles (\$20). The operation occupies three to five minutes. Each patient stays in the hospital three days, refrains from work ten more days. Mortality is trivial.

If a woman goes through with a conception, she has continuous, free prenatal care; gets six to eight weeks off from work, with pay before and after delivery; receives a bonus while nursing.

As projected, and to a noteworthy extent realized, every doctor in Soviet Russia is a state official "and the practice of medicine is concentrated in dispensaries, polyclinics and hospitals in which the individual doctor is never an isolated unit, but is in systematic touch with every branch of medicine."

If a sick individual is utterly unable to leave his home, a district nurse or doctor will visit him. Otherwise, every patient must go to his neighborhood dispensary where he is given a thorough medical inspection. If he needs special attention, he is sent to a central polyclinic or to a general or special hospital. Astonishing is "the vast provision of convalescent home and sanatorium accommodation, probably larger in proportion to population than in any other civilized country." Health officials are making especially strenuous efforts to "liquidate" tuberculosis and venereal disease. In all regions are special institutions for the treatment and cure of both.

In the main, the Russian can choose his own doctor within his own district. Doctors can usually choose the districts in which they want to practice. A doctor may practice as a specialist, after passing stiff examinations, and thereby get a slightly higher income from the government. He may practice privately (only 10 per cent do) after his four or six-hour daily stint for the state. Education of doctors and nurses is below U. S. par, but improving. Pure research is encouraged.†

Commissar of Health Mikhail Fedorovich Vladimirovsky told the inquisitors emphatically that in

†Bacteriologists of Moscow's Metchnikoff Institute last week announced cultivation of the virus of typhus fever, louse-borne disease which attacks 30,000 Russians yearly. (In 1920-21 an epidemic affected 4,000,000.) Metchnikoff immunologists are developing an anti-typhus serum.

\*Doubleday, Doran (\$2.50).

the U. S. S. R.‡ "medical aid is given without payment to all workers and peasants, who form the bulk of the population. For the rest, the desire is to serve all gratuitously, but hitherto they have not been included in the general service, the first call being for the workers. Thus in a dispensary an intellectual will have to wait until all the workers have been treated."

Commissar Vladimirsky thrilled Sir Arthur and Mr. Kingsbury with the terrors of his life. At 22 (he is 60 now) he was exiled for pre-communist revolutionary activities against Tsardom. He shared in the "Decembrist" uprising of 1905, was arrested and emigrated "under pressure." In France he practiced medicine, astonished villagers by occasionally treating them free. He was at Lenin's side and Trotsky's during the terrible days of 1917 when the Bolsheviks took command of Russia. No one is more authentically Russian than he, no one more authentically of the Party.

In conclusion, Sir Arthur Newsholme and John Adams Kingsbury approve the Soviet plan of free, or nearly free, medicine for almost everybody. They point out that "in every civilized country medicine has become more than half socialized . . . and, except in Britain and America, nearly all hospital treatment is a state service. Even in these two countries it is to a very great extent a state service. . . . In all countries west of the U. S. S. R., total official bulk larger than total private medical activities. . . . Other countries may well envy Soviet Russia's elaborately centralized Government . . . in that it has been able to brush aside all past complexities and to initiate a nearly universal national medical service on unified lines, untrammelled by such complications as exist in western Europe and America."

It is hoped that this book will have a wide circulation. Readers of the book should bear in mind that its authors are biased in favor of state medicine. It also stands out very clearly that the information contained in the book was gathered from visits to the headquarters. They did not get the information by contact with the sick people among the millions in Russia.

The bias of the authors is very clearly indicated by statements in the last paragraph of the review in which this statement occurs . . . "Other countries may well envy Soviet Russia's elaborately centralized Government . . . in that it has been able to brush aside all past complexities and to initiate a nearly universal national medical service on unified lines, untrammelled by

such complications as exist in western Europe and America."

If doctors and lay people will read this book, biased as it is, they certainly can form some idea as to whether they want a Russian system of medicine practice engrafted upon an American democracy.

It must be borne in mind that Soviet medicine is in a Soviet government and in such an environment it has its greatest opportunity for success. A Soviet system of medicine within a democracy would be another thing.

There are indications that attempts will be made to foster on the American public such a system of medical practice. The times are ideal for such an attempt. Once such a system has been put in operation it will be too late for protests.

It seems a bit strange that an officer of a wealthy foundation in America should boldly attempt to propagandize the American public immediately following the recognition of Russia by our national government.

The doctors connected with these foundations in most instances have a purely academic opinion of medical practice. The public, if sensible, will pay more attention to doctors who are actually engaged in delivering medical services at the bedside.

#### MEDICAL SERVICES TO INDIGENT PERSONS ON FEDERAL RELIEF ROLLS

In the November issue of the Journal there appeared a tentative plan for giving medical services to indigent persons on Federal Relief rolls. There was also published an editorial in which it was made plain that the plan was tentative, subject to approval by the national administration and by county medical societies.

This tentative plan was approved by the Relief Administration in Washington. It was submitted to the Board of Trustees at a meeting in Knoxville on November 17th, and the Board of Trustees passed the following resolution:

"It is moved that the Board of Trustees approve the plan for medical relief to indigents as published in the November issue

‡There is a Commissar of Health for each of the seven Soviet Republics. But Commissar Vladimirsky's province, Soviet Russia proper, represents 70 per cent of the nation's people.



of the Journal, provided that the Medical Association reserve the right to determine when the emergency has ended."

"This plan is approved purely because of the emergency existing, but it should be discontinued when the emergency has ended."

"The approval of the plan does not make this binding upon any local society to follow this plan."

Since this plan was drafted the Federal Administration has been changed. For example, the CWA was created. It was created for the purpose of giving employment to people on Federal Relief rolls.

Those who are transferred from relief rolls to Federal pay rolls are expected to buy their own necessities, including medical services for conditions which are not taken care of under the Federal Compensation Commission.

There are still on the relief rolls those people who have not been given employment and those who are unable to work at all. It was understood that this medical relief applied only to people who are actually enrolled on Federal Relief rolls. It was not approved as a schedule of fees to be applied to routine cases. As a matter of fact, this plan of medical relief does not propose to furnish complete medical service at all.

In drawing the plan it was necessary to stay within the limits fixed by the Federal Relief Administration. Nobody approved it on the basis of it being an ideal plan. It was purely a tentative emergency plan to be discontinued the moment the emergency is passed, and it applies only to those who are being fed and clothed out of relief funds.

It has been learned that the schedule of fees provided for in this plan differs from those in effect in some other states. In fact, it seems that no two states have the same fee schedule. For this reason there has been complaint from members of the medical profession in Tennessee.

The office of the State Administrator in Tennessee has been advised of these complaints. We are given the assurance that the schedule may be revised. Steps are being taken to ascertain the facts as to the schedules that are in effect in several other states and when these facts are ascertained steps will be taken to bring our schedule in Tennessee into line with the schedule in effect in the other states.

Again it should be emphasized that the state officers of the Association have devoted their time and energies to this matter in the interest of the public and the medical profession and that no one assumes to possess the authority to make these agreements binding upon local organizations. Every local county society is perfectly free to negotiate agreements with its local county administrator.

It should be stated also that things have happened with great rapidity and that information available at the time the original plan was drafted was exceedingly limited. In fact, regulations in Washington in effect today may be altered tomorrow. This is the information we get from the headquarters of the American Medical Association. We therefore hesitate to publish a conclusion which may be out of date by the time the Journal reaches the membership.

## DEATHS

Dr. W. W. Widener, Mountain City; Lincoln Memorial University, Medical Department, Knoxville, 1900; aged 62; died suddenly on December 23rd.

Dr. Bart N. White, Murfreesboro; University of Tennessee, College of Medicine, 1909; aged 54; died December 19th.

Dr. J. G. Eblen, Lenoir City; Southern Medical College, Atlanta, 1898; aged 65; died January 2nd, after a long illness.

## OFFICERS OF COUNTY MEDICAL SOCIETIES FOR THE YEAR 1934

(That Have Reported So Far)

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J. R. Bone, Lebanon, Secretary-Treasurer.

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## NEWS NOTES AND COMMENTS

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Dr. M. C. Wiggins, of Paris, Tennessee, is spending the winter at 1930 East Fourth Street, Tucson, Arizona.

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A portion of Dr. Jesse Hill's weekly letter to the members of the Knox County Society

is well worth quoting. Under date of December 19th, Dr. Hill wrote, "Christmas will soon be here. We humbly bow before the Great Physician whose birthday it commemorates and may every doctor treat his fellow doctors and give the attention to his patients that the Great Physician would have him do."

"The Knox County Medical Society has finished the best year in its history from the standpoint of attendance and scientific papers which are the things that make up a real Medical Society. The society gets better every year."

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Dr. Shields Abernathy, F.A.C.S., and Dr. Horace D. Gray, Roentgenologist, announce the opening of the Surgical and Radiological Clinic equipped with Radium, Improved Deep Therapy and Diagnostic X-Ray Equipment, 1001 Madison Avenue, Memphis. Special effort directed toward prevention, study and treatment of cancer.

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Dr. C. M. Womack, of Lawrenceburg, has been seriously ill in a Nashville hospital.

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Even though repetition be tiresome, we are again referring to the personal attendance record of the Knox County members. We hope this and other references to this subject may stimulate other societies to keep records of personal attendance. We believe such records will increase the interest in the meetings and improve the society in all respects.

If any other societies have records of personal attendance we will be glad to publish them.

During 1933 the Knox County Society had forty-seven meetings. Fifty-one members were present at more than half the meetings. Twenty-eight were present at more than one-fourth the sessions. Fifty-one were present at one to eleven meetings, while eight attended none.

## WOMAN'S AUXILIARY

*President*.....Mrs. W. O. Floyd, Nashville  
*President-Elect*....Mrs. Willis Campbell, Memphis  
*Press and Publicity* .....  
 .....Mrs. W. W. Wilkerson, Jr., Nashville

Greetings for a New Year of splendid health and prosperity to each member of the Woman's Auxiliary and her family. To every individual and to each local Auxiliary, we would wish the greatest joy in living and in doing.

### REPORTS OF LOCAL AUXILIARIES

Knox County—Mrs. H. E. Christenberry, President.

The new officers for the year, 1934, were installed at a business and social meeting held on Wednesday morning at the home of Mrs. Carl R. Martin in Fountain City. The new officers are:

Mrs. H. E. Christenberry, President.  
 Mrs. Jesse Hill, Vice-President.  
 Mrs. S. J. Platt, Recording Secretary.  
 Mrs. W. A. Boise, Corresponding Secretary.  
 Mrs. W. S. Dorsey, Treasurer.  
 Mrs. R. G. Reaves, Historian.  
 Mrs. Carl R. Martin, Parliamentarian.

A delightful luncheon followed the business session and installation of officers.

Shelby County—Mrs. W. T. Black, President.

We regret the fact that no report was received, for this month's Journal, from Shelby County Auxiliary.

Davidson County—Mrs. B. F. Byrd, President.

Christmas charity activities were planned at the meeting of the Auxiliary on December first, held in the parlors of the Y.W.C.A. Mrs. J. D. Lester, the philanthropic chairman, was in charge of the program. The charities outlined by Mrs. Lester included contributions to be made to the children's ward at the General Hospital and to the Florence Crittendon Home.

Mrs. B. F. Byrd presided over the business section of the meeting. The chief feature of the program was the reading of a one-act play, "The Rescue," by Mrs. Hill Turner.

### PERSONAL ITEMS

Born, on December 5, 1933, to Dr. and Mrs. Travis Martin, of Nashville, a girl, Carolyn Pierce.

Mrs. D. H. James, of Memphis, while visiting relatives in Nashville, attended the December meeting of the Auxiliary.

## MEDICAL SOCIETIES

### *Anderson County:*

The Anderson County Medical Society held a New Year banquet at the Park Hotel, Clinton, with former members and their wives as guests of honor. Dr. Tom Phillips, mayor of Rockwood, a former member of the society, was the principal speaker.

### *Davidson County:*

December 12—"Acute Syphilitic Meningitis," by Dr. Merrill Moore, of Boston and Nashville. Discussion opened by Dr. J. P. Gilbert.

December 19—"Review of 292 Cases of Incomplete Abortion," by Dr. D. W. Smith. Discussion opened by Dr. W. C. Dixon.

Case Report—"Mesenteric Strangulated Hernia — Operation — Recovery," by Dr. Carl Crutchfield.

December 22—Called meeting to discuss the use of doctors in the CWA examination of school children.

January 2—Annual dinner and election of officers.

Dr. F. C. Warnschuis, Speaker of the House of Delegates of the A.M.A., delivered an address.

### *Giles County:*

The Giles County Medical Society met December 28 and elected officers. Fifteen members were present at the meeting and later attended a banquet at Hotel Richland, Pulaski.



*Knox County:*

December 12—Dr. Ralph Monger's essay was on "Diseases of the Hemorrhagic Diathesis." Dr. R. V. Depue opened the discussion.

December 19—Dr. Jarrell Penn presented a discussion of "Fractures About the Elbow Joint." Dr. Robert Patterson opened the discussion. Officers were elected.

January 2—Dr. A. H. Lancaster delivered his presidential address and new officers were installed.

*Putnam County:*

The Putnam County Medical Society met December 7 and elected officers.

The Society met in its regular session January 4th, with sixteen members present. This was the largest attendance in the history of the society.

*Robertson County:*

Dr. and Mrs. C. F. Delap entertained the Robertson County Medical Society at a quail luncheon. Those present were Drs. W. F. Fyke, W. W. Porter, W. B. Dye, R. D. Moore, J. S. Hawkins, of Springfield; J. R. Connell, of Adams; J. W. Thomas, of Cross Plains; S. E. Ayers, of Orlinda; W. S. Rude, of Ridgetop; J. S. Fentress, of Goodlettsville, and W. L. Gossett of Adairville, Ky.

*Shelby County:*

December 19—The annual meeting and election of officers with the annual dinner was held.

December 22 — Called meeting for the purpose of hearing Dr. R. G. Leland, of the Bureau of Economics of the A.M.A., discuss the question of Federal aid to the indigent sick.

January 2 — Report of Hospital Committee by Dr. Battle Malone, Chairman.

"The Periodic Payment Hospital Plan," by Mr. Geo. D. Sheats. Discussion opened by Dr. Henry Hedden.

*White County:*

The White County Medical Society met

in December with a record attendance of twelve members.

Dr. S. E. Gaines read a paper on "The Use of Obstetrical Forceps."

Dr. W. J. Johnson will read a paper in January, and the Society will meet in Dr. A. F. Richard's office regularly on the second Thursday in each month.

*Wilson County:*

On January 4, Dr. F. O. Pearson was the essayist, subject, "Epilepsy."

The February meeting will be held on the eighth. Dr. L. L. Tilley will discuss "Causes and Treatment of Acute Gastritis."

## OTHER MEDICAL SOCIETIES

### VANDERBILT UNIVERSITY MEDICAL SOCIETY

December 1, 1933

#### 1. Case Reports:

- (a) Pachymeningitis in an Infant.—  
Dr. Tom Harris.

P. R. D., four months old white male, admitted to hospital November 2, 1933, with illness of four days' duration, consisting of fever, vomiting and refusal of food. Presented a bulging fontanelle and signs of meningeal irritation. Bloody fluid obtained from lumbar region, cistern and from subdural space on puncture through fontanelle bilaterally. Evidences of new and old blood had disappeared from spinal fluid on ninth day. Bloody fluid continued to accumulate in the subdural space which has been aspirated biweekly. There has been definite decrease in amount presented for past week and patient's general condition is improved.

Case discussed by Dr. Cobb Pilcher.

- (b) Case of Acute Yellow Atrophy.—Dr. James Kirtley.

Mrs. E. P., white female aged 28, entered the hospital November 4, 1933, with a history of malaise, weakness, et cetera, for five weeks. Progressive obstructive jaundice, intermittent mild epigastric pains, nausea and vomiting for three weeks prior to admission. Examination revealed deep jaun-

dice, several carious teeth and marked enlargement of liver. Urine contained albumin, sugar, and leucine crystals. Stools alcoholic. Wassermann negative. Fragility tests normal. Icteric index 40. Laparotomy showed spherical enlargement of dependent part of right lobe of liver. Biopsy of liver showed lobular destruction of liver cells typical of acute yellow atrophy. Post-operative course one of steady improvement. Rarity of survival cases, marked enlargement of liver, absence of definite etiological agent were points stressed.

Case discussed by Drs. Goodpasture and Burwell.

2. Validity of the Determinations of the Osmotic Pressure of Serum Proteins by the Rapid Method.—Dr. Herbert S. Wells.

Using the Krogh method, as modified in this laboratory, it has been found that the values of the osmotic pressure of hemoglobin solutions (human, made up in Ringer-Locke's solution of pH 8.00) of concentration up to 14 grams per 100 c.c. are all on the same pressure-concentration curve as that obtained by Adair who employed an entirely reliable but much more time-consuming method. It is concluded that our method, which allows accurate determinations of the osmotic pressure of the readily standardized hemoglobin solutions, may be relied upon to give accurate results on blood serum.

Paper discussed by Dr. Youmans.

3. A Case of Histoplasmosis of Darling in an Infant.—Drs. Katherine Dodd and Edna Tompkins.

A case of fungus infection (histoplasmosis of Darling) was reported in an infant in Tennessee. The diagnosis was made from the blood, first from supravital studies and later in stained smears, by finding the characteristic parasite in the large mononuclear cells. The diagnosis was confirmed postmortem by finding an invasion of the tissues with large mononuclear cells filled with the parasite. It seems probable that the part played by the large mononuclear cells in the plugging of blood vessels, in the collapse of the alveoli of the lungs, in the massive invasion of the bone marrow and

in the destruction of red cells, may explain many of the symptoms of the disease. The identity of the invading organism was established by Dr. Demonbreun, and its characteristics reported by him.

The Cultivation and Cultural Characteristics of Darling's *Histoplasma Capsulatum*.—Dr. W. A. Demonbreun.

From a fatal case of Darling's histoplasmosis in an infant, the causative microorganism was cultivated from blood obtained from the patient before death, and from tissue obtained at autopsy. The microorganism proved to be a fungus, not heretofore cultured or described, which, under proper conditions, may be maintained in cultures either as a mold, or as the yeast-like form seen in the lesions. Under controlled conditions conversion of either form of the microorganism to the other form has been repeatedly accomplished. The disease has been reproduced in monkeys by means of intravenous injections of cultures of the yeast-like form of the fungus.

These two papers were discussed by Drs. Meleney, Youmans, William Litterer.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Local Anesthesia in Labor. H. D. Tripp, M.D., The Journal of the Indiana State Medical Association, November, 1933.

General anesthesia in labor is not always convenient and when it is used the patient is unconscious when her cooperation is most needed. Also there are the usual contraindications. Therefore, the author has been using novocain infiltration. He uses the following method. When contractions are becoming painful amytal is given by mouth. When the head begins to make pressure on the perineum the novocain is injected into the muscles.

With this method labor is conducted practically painlessly with the cooperation of a quiet and calm patient period. The muscles are relaxed, labor is shortened and lacerations are less frequent. If an episiotomy is indicated it can be performed and repaired without pain. When operative procedures such as forceps are necessary he adds ether anesthesia, but very little ether is required.



## OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

Radiant Energy as (A) a Pathogenic, (B) a Therapeutic Agent in Ophthalmic Disorders. H. B. Stallard, American Journal of Ophthalmology, December, 1933. The Gifford Edmonds Prize Essay for 1932.

This essay, of 126 pages, discusses radioactivity in relation to malignant and benign growths, and to certain types of inflammatory disturbance of the lids and eyeball. In the treatment of malignant intraocular neoplasm, particularly sarcoma of the choroid and glioma of the retina, the interstitial insertion of a radon seed is the method of choice. For angiomatosis retinae the suturing of radon seeds to the sclera over the site of the neoplasm was found effective. For epibulbar neoplasms well localized and not extending widely around the limbus "contact" irradiation with an unscreened applicator for a short duration is better than other methods. By this means beta rays, which have a relatively short range, are employed mainly; as the prolonged application of screened radium emitting only the deeper penetrating gamma rays is likely to cause damage to the lens. For neoplasms which are exuberant or infiltrate deeply, surgical removal with a diathermy knife followed by irradiation is a more certain means.

As to the orbit, lymphosarcoma is particularly radiosensitive, and good results have followed when radium was applied to the affected site after thorough excision of a well localized sarcoma near the anterior part of the orbit and not attached to the bone. Malignant neoplasms affecting the bony walls of the orbit are exceedingly difficult to treat with radium, and osteonecrosis is a serious complication. If access to the neoplasm is difficult and the vision seriously affected, exenteration of the orbit followed by irradiation is to be preferred.

Also discussed are the radium treatment in vernal conjunctivitis, in hemangiomas of lids, conjunctiva, and caruncle, in Mooren's ulcer, keratitis, cataract, blepharitis, blastomycosis, sycosis of the lid margins, conjunctival pemphigus, trachoma, pinguecula, and pterygium.

## PEDIATRICS

By JOHN M. LEE, M.D.  
Doctors Building, Nashville

Hemorrhagic Disease of the Newborn. H. N. Sanford, M.D., The Journal of Pediatrics, December, 1933.

This condition is observed occasionally in the newborn somewhere between the second and eighth day of life. Bleeding from the mucous membrane,

gastrointestinal tract, the cord or other portion of the body is the only characteristic sign. The cause is not known.

Decrease or lack of prothrombin and fibrinogen have been found. The platelets are not diminished. In this disease there are increased bleeding and clotting time. This will aid in differentiating from traumatic hemorrhage.

Prophylaxis is a problem of obstetrics. Moore was able to produce a hemorrhagic condition experimentally by feeding the mother a diet lacking in vitamin B. Graham found that young animals subjected to prolonged anesthesia showed increase in bleeding and clotting time. The same thing has been shown in the child born after a long ether or ethylene anesthesia.

In treatment of the actual hemorrhage anything except blood is useless. The use of calcium, viosterol, thromboplastin, etc., is a waste of time. Transfusion is the best method of injecting blood into the patient, however intramuscular injection of whole blood will prove effective in most cases. Very good results have followed injection of 10 c.c. intramuscularly. In severe cases 50 to 100 c.c. intraperitoneally gave as good results as intravenous injection. The results from the use of mother's blood, father's blood, and "foreign" blood were compared. The author thinks "foreign" blood most effective, father's blood next best, and the mother's blood third in value. Wassermann test should be negative on "foreign" blood.

## ROENTGENOLOGY

By C. M. HAMILTON, M.D., and H. M. KING, M.D.  
Doctors Building, Nashville

Persisting Errors in the Technic of Oral Cholecystography. A Procedure Designed to Avoid Them. B. R. Kirklin, Rochester, Minn., Dec. 30, 1933, Journal of A.M.A.

Belief that intravenous cholecystography is superior to the oral method has stimulated the essayist to express a contrary view. Formerly, the intravenous method was reserved for indecisive cases. Experience and improvement in oral technic have caused intravenous technic to be abandoned even in recheck cases.

To be effective, the dye must be given: (1) in sufficient quantity, (2) in readily absorbable form, (3) so as to avoid nausea or purgation, (4) under conditions that will facilitate absorption.

It has been found that 4 grams of tetraphthalein is the best dosage. This can be reduced for children. Best results are obtained by administering the dye in solution, preferably fruit juice or carbonated water. Aqueous solutions should be freshly prepared. Grape juice is used most often.

Nausea and vomiting can be obviated by giving the dye immediately after eating a full meal.

The meal should be as free of fats as possible. Fats retard the emptying of stomach, hinder absorption of dye in bowel and small intestine, (Delario), and stimulate evacuation of gall bladder.

It is possible that absorption from intestinal tract might be interfered with by physiologic disturbance, but such cases have not been encountered.

Purgatives should not be given before administering the dye.

Diverse opinion of the value of oral cholecystography is probably due to the lack of a uniform method of administering the dye. Some allow fats, some advise small meals, and others give small doses. Purgatives are also prescribed.

For three years a uniform routine has been followed at the Mayo Clinic. Very few disagreeable reactions have occurred. An intravenous cholecystography has not been done in over a year. Details of procedure:

Patient is given 4 grams of sodium tetraiodophenolphthalein dissolved in 30 c.c. of water and instructed to: (1) eat a full meal without eggs, cream, butter, or fats at 6 P.M., (2) empty dye solution into glass of grape juice and take immediately after meal, (3) take no laxative or other medicine, (4) take saline enema at 7 A.M., (5) water, black coffee, or clear tea may be allowed the following morning.

Cholecystograms are made at 14, 16, and 20-hour intervals. The patient is given a glass of milk, cream, and a meal preceding the 20-hour examination.

Cholecystograms are made during exhalation, using Potter-Bucky grid and fast exposure.

In 1932, there were 4,676 examinations. Operations were done on 732 cases. Diagnosis was correct in 95 per cent of patients. Negative diagnosis proved correct in 89.5 per cent of the cases. Positive diagnosis was correct in 98.6 per cent of the cases. The greatest error occurs in diseased gall bladders with normal function. Gallstones were found in 415 cases and 70.8 per cent were diagnosed before operation. Six tumors diagnosed before operation were confirmed, but a few papillomas were not recognized before operation.—C. M. Hamilton.

### **SURGERY—GENERAL AND ABDOMINAL**

By ROBIN F. MASON, M.D., F.A.C.S.  
735 Medical Arts Building, Memphis

of our time-honored beliefs is about to be cast into the discard.

The universal (so far as we know) belief, in the sterility of the normal peritoneal cavity has never before been challenged by the majority of the profession.

These men began a study of peritonitis in 1928 in the human.

In order to start from scratch, it was decided to begin with cultures taken from peritoneal cavities which were clinically normal and uninfected. Much to their surprise, cultures obtained from cavities of patients operated upon for hernia, fibroid, interval appendicitis, etc., showed a steady growth of organisms.

They at once attributed the positive cultures to contamination due to faulty operative technique.

In order to ascertain at what point contamination occurred, cultures were taken from the knife blades used to make the incision and from the skin after preparation for operation. Although 2 per cent iodine in alcohol and alcohol after cleaning the skin with ether, was used, surface cultures were found to be positive.

As a result skin antiseptic M. B. G. V.-5 was evolved, surface sterilization by this agent was found to be perfect always. Still cultures taken from knife blades were found to be positive.

This could be explained by one of two theories.

1. The bacteria were airborne.

2. The bacteria were between the skin and the external oblique aponeurosis.

In order to disprove the airborne theory, cultures from the air were repeatedly and carefully taken and compared with, (1) bacteria of the skin surface, (2) bacteria of the deep skin layers, and (3) bacteria of the peritoneal cavity, in cases both with and without intraabdominal reaction.

These tests were made with scrupulously careful technic and throughout a period of three years' experimentations. It was shown by these experiments that the bacteriae contaminating the knife blade were different from those taken from the air.

Specimens taken from the normal peritoneal cavity also differed from those taken from the operating room air.

Both male and female subjects were used in these experiments.

As a result the authors have come to the following:

The Aseptic Peritoneal Cavity—A Misnomer. Johnson, Roberts, and Bruckner. S. G. & O., December, 1933, Page 752.

It would appear from this article that one more



## CONCLUSIONS

"1. Our studies lead us to believe that in 80 per cent of instances a growth can be obtained from cultures taken from within the peritoneal cavity.

"2. This is true, whether the patient be male or female, and irrespective of the clinical evidence of the presence of intraperitoneal inflammatory reaction.

"3. The character of the flora from within the peritoneal cavity differs markedly from that obtained from the air.

"4. We believe that there is no such thing as intraperitoneal asepsis."

## BOOK REVIEWS

*The Story of Childbirth.* Dr. Palmer Findley. Doubleday, Doran and Company, New York, 1933.

*The Story of Childbirth*, by Dr. Palmer Findley, should be well received, not only by the profession, but by the laity. The author deals with historical facts regarding menstruation, marriage, childbirth, and allied subjects dating back before Christ up to

the present time. The author correctly states that the treatment of such conditions in the earlier centuries were based upon witchcraft, superstition and ignorance. Some of these superstitions are still believed among the present generation.

He relates the interesting history of the antagonism of the midwife against the physician exercising his prerogative in attending obstetrical cases. The high death rate in maternity cases was due, and is at present due, to the improper training of midwives. He states that in Norway, Sweden and Denmark, where the midwife is required to take two or three years' training in the art of midwifery, the death rate is much lower.

Dr. Findley's book, which is well illustrated, shows the wonderful progress made in obstetrics in this country in the more recent years and speaks of the low death rate in the lying-in hospitals where the obstetrician has been properly trained.

*The Story of Childbirth*, while dealing with facts, reads like a novel and while it is written for the laity it should be read by all physicians and trained nurses. It is a story which all expectant mothers should read.—Wm. T. Black.

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## TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

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### APHONIA IN ACUTE LEUKEMIA\*

WM. D. STINSON, A.B., M.D., Memphis

A LEADING neurologist once said: "It is impossible to understand nervous diseases without comprehension of general medicine and general pathology.

"The physician bent on correct neurological application must therefore, like St. Peter on the roof top, call nothing common or unclean in his search for prime cause, and if he cannot culture the stool himself, must be aware of cultural possibilities and their significance." It is for this reason that I am calling attention to a prodromal symptom well known to the internist, but one with which the otolaryngologist is not so familiar.

Warren, in reporting 28 autopsied cases of acute leukemia, says:

"In summarizing information concerning the prodromal period, many apparent unrelated symptoms may be the first symptoms of acute leukemia. There are, however, three very common complaints which stand out as predominant early symptoms of this disease.

"(1) The patient frequently consults a throat specialist because of sore throat and enlarging tonsils. If the leukemia is unrecognized, the tonsils may be removed. This is frequently followed by severe, prolonged hemorrhage because of the marked decrease of the blood platelets. Thirty to forty per cent of the patients have had a prolonged hemorrhage after tonsillectomy,

dental extraction, or some trifling operation, leading to exsanguination.

"(2) Ulcerative stomatitis is frequent in the early stages of acute leukemia, the ulcerative lesions involving the pillars of the tonsils, the tongue, and the posterior pharynx. The organisms of Vincent's Angina occurred in 50 per cent of the cases under review. In non-leukemia cases, such a stomatitis may be accompanied by a blood picture roughly resembling that of acute leukemia.

"(3) In somewhat over 50 per cent of the cases of acute leukemia, shortly before the onset of the first symptoms attributed to the leukemia, there was a history of respiratory infection, sometimes classified as a 'cold,' 'the grippe,' bronchitis, or the like. This infection is recorded usually as 'hanging on' and 'failing to respond to treatment.' There is usually more prostration than there is reason to expect, and the severity of the symptoms remains unexplained until the leukemia is recognized."

Acute leukemia may be divided into two types which are differentiated by the type of cell which predominates: (a) Acute myeloblastic leukemia. (b) Acute lymphatic leukemia. This division is frequently difficult, and is of more interest to hematologists than to clinicians. In many instances the cells may be so immature that even histological study of the tissue after death fails definitely to demarcate the myeloblastic from the lymphatic "type." Consequently, I make no attempt to go into the differential

\*Read before the Tennessee Academy of Ophthalmology and Otolaryngology, Nashville, April 10, 1933.



diagnosis of the blood dyscrasias. The laryngologist fulfills his responsibility if he recognizes the possibility, orders a blood smear done, and refers the case to a hematologist if anything abnormal is found. Certainly one in our specialty has great temerity to venture into matters still unsettled by the hematologists themselves.

#### Case Report:

September 6, 1931, I was called to see E. W. B., age 48, who "had lost his voice" three days previously. He had been entered that day at Gartly-Ramsay Hospital by friends in an attempt to conclude a prolonged spree beginning August 15th. He asserted that he had been drinking steadily since that date, and had contracted a cold in the last few days. For the last three days had eaten no food. He was very nervous, talking volubly, but coherently. His face was flushed, and he spoke in whispered voice, but had no pain.

Examination showed an intense deep redness of the pharynx and palate, no tumor formation. The pharyngeal mucosa was very dry, thrown into deep longitudinal folds. There was a heavy viscid discharge from the nasopharynx, which could be pulled out in strings. This intense congestion extended into the hypopharynx, involving the epiglottis, larynx, and tracheal mucosa as far as it could be seen. The temperature was normal, with pulse 100. There was no cervical adenitis. My attention was directed exclusively to the upper respiratory tract, no general physical examination being attempted, as he was under the care of his regular physician.

The family and past history with which I was acquainted was of no significance. As the local source of supply for one on such a debauch is apt to be green corn whiskey, the appearance of the throat was attributed to prolonged irritation plus general debilitation. As a matter of fact, microscopic study of the leukemia cells and their distribution shows a general infiltration of every organ, which undoubtedly was the case in the pharyngeal tissues.

The following day the condition was unchanged. On the third day he came to my office stating that he felt better, was going home for a few days before returning to

work. He was still rather voluble in his conversation.

Two days later he called me to attend him at a local hotel, and I learned that he was drinking again. The next day I refused to attend him at a suburban sanatorium on the basis that local treatment would be useless.

Nine days later I was called to see him at the Methodist Hospital. His friends, despairing of controlling him, had notified his relatives, who in turn placed him there under the care of a competent internist. His findings were: Temperature 102.2. Hematology—Hemoglobin 63. R. B. C. 3,310,000. W. B. C. 22,900. Polys 8. Lymphocytes 6. Myelocytes 67. Myeloblast 19. Platelets 400,000. The pharynx and larynx were as before. September 26, 1931, he showed some improvement, and left the hospital, but died at home several days later.

Again, I wish to emphasize the fact that the otolaryngologist should at all times keep in mind that the comparatively benign local condition for which the patient presents himself may be the manifestation of a serious systemic condition, recognition of which will save us from later embarrassment.

#### DISCUSSION

DR. W. G. KENNON (Nashville): It is always interesting, if one is given sufficient time in which to prepare, to discuss a paper on a subject about which until it was brought to his attention his ignorance was profound.

I have to thank Dr. Stinson for sending me his paper in plenty of time to enable me to at least try to lessen the depth of my ignorance on this subject and for bringing to my attention one of the many things about which I was ignorant.

I am truly sorry that Dr. Stinson was unable to secure a post-mortem examination of his patient for I feel sure that if he had done so, he would have made some sort of an examination of the structures of the larynx.

It seems strange that in all the literature which I have reviewed and which has been reviewed for me that there is no record of any examination either gross or microscopic of the laryngeal structures, despite the fact that symptoms of upper respiratory involvement are frequently the first for which these patients seek relief.

I have, of course, recently read the paper by Stafford L. Warren to which Dr. Stinson refers.

In this paper the statement is made that in over fifty per cent of these patients, shortly before the symptoms attributable to acute leukemia develop, there is a history of upper respiratory infection of some character which is recorded as

"hanging on" and "failing to respond to the usual treatment" for such conditions.

There is usually more prostration than there is reason to expect and the severity of the symptoms remains unexplained until the leukemia is recognized.

In a paper by Joachim and Loewe is reported a patient who developed acute laryngitis, in addition to the signs of leukemia, two weeks after coming under observation.

Examination showed marked anemia of the larynx and pharynx throughout. Slight ulceration of the tip of the epiglottis on its laryngeal surface, slight ulceration and infiltration of the vocal cords and moderate bilateral edema of the arytenoids.

An autopsy was done in this case but unfortunately no examination of the larynx is recorded.

In talking to Dr. R. S. Cunningham, Professor of Anatomy at Vanderbilt University, he told me of two cases, which he had personally seen, in which hoarseness was well marked and is under the impression that several other cases which he saw developed this condition. He knows of no autopsy reports in which there is recorded any examination of the laryngeal structures either grossly or microscopically.

I have carefully reviewed the American Literature of the past few years on this subject and can find nothing recorded on this particular phase of the subject.

Dr. Cunningham has kindly looked through most of the recent German publications. His kind assistance has likewise been without results.

It would be most interesting to secure specimens from the larynx in such a case, for it seems probable, in view of the invasion of various organs and structures by the leukemia cells such as the skin, the base of the tongue and the gastric mucosa, that the laryngeal symptoms might be the result of a localized collection of such cells.

Certainly, if in the future it should be my fortune to have a patient with this condition, I will make every effort to get a small piece of the larynx after the individual has no further interest in its use.

DR. W. W. WILKERSON (Nashville): Aphonia, according to Dorland's Medical Dictionary, is the loss of voice not due to a central lesion. However, hoarseness or loss of voice attributable to any cause is sometimes spoken of as aphonia.

The causes of aphonia may be classified as follows:

1. Functional or hysterical.
2. Lesions of the motor tract of the vagus or recurrent laryngeal nerves.
3. Myopathic inflammation.
4. Peripheral neuritis.

The lesions of the vagus or recurrent laryngeal nerves which might occur from the pathology of acute leukemia are:

1. Glands in the neck involving the vagus close to its exit from the skull.

2. Cervical glands.

3. Pleural thickening at the apex of the lung (right usually).

4. Enlarged bronchial or mediastinal glands.

Myopathic inflammation in this particular case must not be forgotten as a cause; the essayist having called our attention to the marked congestion involving the upper respiratory tract, larynx and tracheal mucosa.

Peripheral neuritis must also be considered. Nevertheless after an exhaustive search of the literature I cannot find a single mention of acute leukemia being a causative factor of peripheral neuritis.

It is impossible from the essay to ascertain whether or not this case was one of hysterical aphonia.

It might be of interest to note the fact that Joachim and Loewe\* reported a case of acute myeloid leukemia with indefinite and unusual pathology of the lungs. Their case also had anemia of the pharynx, larynx, ulceration of the epiglottis, infiltration of the true cords and anemia of the arytenoids.

Medicine being an inexact science, yet an exacting taskmaster, makes it imperative that we deduct correct, or at least reasonable, conclusions at all times. In regard to the aphonia in this case, I fear that I am unable to do either. Nevertheless, in my opinion, aphonia cannot be classified as a symptom of acute leukemia. Infrequently it occurs during the course of many diseases. Since the essayist stated that no cervical adenitis was present, I would infer that had any demonstrable glandular enlargement been present, it would have been mentioned. Neither was any chest involvement mentioned. We could therefore discount pressure on the vagus or recurrent laryngeal nerve as a causative factor.

The patient was nervous and much congestion was present. Hence the aphonia, if due to the pathology of acute leukemia, must be classified either as hysterical or as myopathic inflammatory.

DR. JOHN J. SHEA (Memphis): I have had two cases of an acute leukemia, which illustrated Dr. Stinson's text.

The first was a man, who entered the hospital with a paralysis of the left seventh cranial nerve, which later involved the sixth and eighth of the same side. Multiple leukemic lymphoid masses appeared along the gums, which ulcerated. The paralysis was thought to be due to pressure made by similar lymphoid masses along the course of the nerves.

The second case illustrates the importance of a blood count before operating on an adult patient. I saw a man in consultation following an exsanguinated convalescence of a tonsil operation. An examination of his blood revealed an acute lymphatic leukemia. In spite of transfusions the patient died.

\*American Journal of Medical Science, 1927.



## ENCEPHALITIS\*

H. D. LONG, M.D., Chattanooga

THE problems presented by children with encephalitis are so common and so very important that it will stand any amount of discussion. I had believed that the literature of modern pediatrics was filled with this subject until I had occasion to investigate the current periodicals. In the last three years there have been many articles written on hemiplegias and residual paralysis; on epidemic encephalitis and its sequellae; but little has been said of encephalitis following acute infectious diseases. We all see these cases frequently. The only reason I can understand for this apparent neglect is that the condition is not considered grave enough to alarm or that so little can be done in its relief. Possibly too, the lack of pathological material and thereby complete detailed knowledge of these cases has contributed to the lack of interest.

My paper, then, will be limited to encephalitis following the acute infectious diseases. No attempt will be made to discuss epidemic encephalitis except in differential diagnosis. I will not consider a large group of nonsuppurative encephalitis from other than the above cause. Neither will I discuss, either in diagnosis or in treatment, any of the chronic forms or residual conditions.

Much discussion and misunderstanding has arisen when various observers describe varied types of encephalitis. When we realize that the symptoms in the clinical picture are dependent on the location of the major lesion this apparent variation is understood. So we hear the terms encephalitis, serous meningitis, myelitis, meningoencephalitis, encephalomyelitis, etc. The limited pathology and the comprehensive view of the clinical features seem sufficient to warrant a common term which is generally accepted, i.e., encephalomyelitis disseminata. In this

paper for brevity's sake I will continue to use the word encephalitis.

ETIOLOGY: At present there are three main views as to the cause of disseminated encephalitis. First, that the lesions in the brain and cord are due directly to active virus of the preceding infectious disease. (McIntosh.) Second, that they represent an allergic phenomenon caused by the preceding illness. (Glanzmann.) Third, that they are caused by an unknown virus which grows symbiotically with, or is empowered by, the exanthematous disease to attack the nervous system. In support of the first theory McIntosh and Scarff have shown in post-vaccinal conditions the essential lesion is a proliferation and outgrowth of endothelial cells in the adventia, resulting in a primary granuloma affecting the small blood vessels. It has been known for a long time that the virus of vaccinia may be obtained from the central nervous system. Experimentally they state that they have obtained a meningoencephalitis lesion in rabbits eight to ten days after intradermic inoculation.

In refuting the above contention Hurst and Fairbrother have done much work on monkeys and rabbits. They maintain that the vaccine virus can multiply in the nervous system without producing histological lesion of vaccinia. They describe the pathology as a fibrinous, hemorrhagic, and polymorphonuclear meningitis. Further they assert that virus is not neurotropic in the same sense as that of poliomyelitis. It is primarily mesodermal and not ectodermal. Greenfield from this and other work thinks that there is a symbiotic activity at work with the aid of the exanthematous disease.

Professor H. Aldershoff, Director of the State Serum Institute at Utrecht, states that the virus can be shown in the cerebrum often without production of disease. Glanzmann's theory has also been strengthened by the transitory paraplegias from antirabic treatment.

\*Read before the Tennessee State Pediatric Association, Nashville, April 10, 1933.

Bassoe and Drinker show that the lesions following antirabic treatment are identical with encephomyelitis. They think, however, that the condition is due to an attenuated virus rather than anaphylactic.

**Pathology:** Greenfield gives changes in post-measles as (1) congestion and hemorrhage, (2) perivascular infiltration, (3) perivascular demyelination. The last is the most characteristic and has been described by many workers. It is the same characteristic change described by Turnbull, McIntosh, etc., in post-vaccinal encephalitis. In the brain the white matter is more affected than the gray. In the brain stem and spine the gray matter is most involved. This is especially true of the pons and upper medulla. There is no evidence of softening due to occlusion of the blood vessels. Lymphocytes are the most common cell present. Demyelination takes place, but the neuron is apparently well preserved.

The fact that there is such marked similarity in pathological picture after measles, after smallpox or vaccination, after febrile diseases, as influenza, etc. (Greenfield), all lends weight to the theory that the disease is due to an independent agent and not to the virus itself. The pathology is much different from poliomyelitis. Here the gray matter of the cord is chiefly involved and there is marked degeneration of the ganglion cells.

In epidemic encephalitis the pathology is principally in the basal ganglia, the mid-brain and the pons. There is intense perivascular infiltration consisting of lymphocytes and plasm cells. Parenchymatous infiltration is diffuse and is due to some cells.

In meningoencephalitis the lesions are distributed throughout the whole central nervous system. The meninges are little affected. The essential lesion is perivascular, but slightly of the sheath itself. The lesion in the surrounding parenchyma is a broad zone of demyelination. Sheath infiltration is slight in contrast with polio and epidemic encephalitis.

**Clinical Forms and Symptoms:** These vary somewhat in the different diseases. We will take them all together in a general way

and later touch a few high spots of each individually.

The severity of symptoms may be so slight as to pass on unnoticed until later when the residual paralysis is apparent. On the other hand the process may be so severe as to result in serious complications and not infrequently death.

Symptoms may be divided into: (1) Initial symptoms, (2) Focal symptoms, (3) Residual symptoms. Similarly according to the location of the major pathology the symptoms may be: (1) Meningitic, (2) Cortical, (3) Tetanoid, (4) Brain stem, (5) Lower motor neuron types. For simplicity I will group the first four and discuss only cerebral and spinal forms. As a matter of fact the types are always mixed to a greater or lesser degree.

In cerebral types, in the average case the onset is acute, usually with very great rise in temperature. There is a loss of appetite and general apathy. Vomiting usually occurs. It may be ushered in with convulsions, or they may come at any time later in the course of the disease. It is not uncommon, especially in small infants, to have unilateral convulsions often without loss of consciousness. As a rule however, the child is stuporous, confused and delirious. On the second or third day, at the height of the disease, focal symptoms appear. The character and extent depend upon the localization and the severity of the process. Various types of tremor movements, weakness and paralysis result. Pupillary disturbance is rare. Extra-ocular and facial paralysis are common. Eye ground changes may be merely an injection or a mild papillæ edema. Ataxia, nystagmus, etc., is seen in cerebellar involvement. Bulbar lesions give paralysis of cranial nerves, dysphagia, dysarthria and vestibular nystagmus. In almost every instance there is incontinence of feces not always due to paralysis of spincter, but to the mental state of the patient. Phases of increased irritability are seen with changes in disposition. They are inclined to display bad temper and to use all foul words at their disposal. Parents are often shocked and embarrassed by these things.



In the cerebral type, if death does not supervene, the tendency is toward improvement. Even in the more severe cases the paralysis is lessened. The proximal portions of the limbs improve most. The fingers are apt to show the least improvement. With paralysis there is more or less rigid contractures, atrophy, and apparent shortening of the involved member. Trophic and vasomotor changes are seen. Perverse motions are the most distressing of symptoms. They may be slight tics, or marked tremors, ataxias, athetosis, etc. Choreiform conditions resembling Sydenham's chorea may result. This too is usually a hemichorea. Often with the above we have definitely reduced mental capacity. Epilepsy, either Jacksonian or generalized, may follow sooner or later. This is usually permanent and progressive.

The spinal form is much more mild, excepting Landry's type. There may or may not be fever. Paralysis is usually confined to the lower extremities. All extremities may be involved. Paralysis is flaccid at first. Later it tends to become spastic with pathological reflex signs. The tendency of the spinal type is towards complete recovery. Some more or less permanent paralysis may persist.

Encephalitis may occur in the course of scarlet fever, chicken pox, influenza, etc. These cases are rather typical and require no elucidation. They may be either spinal or cerebral in type. They may occur either early or late in the disease.

In whooping cough the condition is also very similar. In the past we have considered convulsions here due to ruptured blood vessels. This may occur but is relatively rare. In cases of whooping cough where convulsions are present the mortality rate is 70-75 per cent.

Encephalitis may occur during the Pasteur antirabic treatment. Many are sure that this is due to the attenuated antirabic virus. It comes on earlier than the true rabies, as a rule from the fourteenth to the thirtieth day. It presents three clinical forms. (1) Landry's, (2) Myelitis, (3) Neuritic. The Landry's type alone is of serious danger to life. Even there if the pa-

tient survives the tendency is towards complete recovery.

Encephalitis following measles was first reported in 1790 by James Lucus. It was a typical case of the spinal type. Abercrombie, in "Diseases of the Brain and Spinal Cord" (1843), also noticed paraplegias following measles. In 1904-5 the condition was seen by many observers—Smith, Pitt, Batten, etc. In 1927 Neal and Applebaum reported 8 cases in New York City. The majority of these cases ended favorably without permanent paralysis. The cases in measles are most frequent during the stage when the rash is fading. Some reports range from the 3rd to the 21st day inclusive.

In mumps the symptoms may precede the swelling and be the first sign of the disease. The majority of cases come at the height of the infection. There is headache, vomiting, convulsions and bradycardia. Peripheral neuritis, especially about the head and face, may occur. This may be associated with herpetiform lesions as in herpes zoster. Cranial nerve lesions are common. Deafness may result. Hubbard, in 1913, in reviewing 50,000 cases of deaf mutes in the United States, reported 3-5 per cent resulting from complications of mumps.

As has been stated before, encephalitis following smallpox has been known for centuries. Many of the older writers mention it. More recently, more and more has been said about encephalitis following vaccination. Moris, Osler and others reported this several decades ago. Since 1922 in Holland, England and later in the United States, this condition has been increasing at an alarming rate. Just why it has been somewhat localized geographically is not known. Tests as to faulty vaccine have been made. Contagion, season, etc., seem to play no part. The only important point seems to be the fact that it is relatively rare up to one year, and almost ceases after the seventh year. This is especially true in Holland.

The onset comes usually from ten to twelve days following vaccination. Rarely as late as the 25th-26th days. The course is stormy. The patient shows evidence of

a very diffuse process. All the various types of symptoms before mentioned may be present in a severe form. The involuntaries, tendency to colds, trophic sores, etc., predispose to chest complications. The mortality rate runs about 43 per cent. The only bright spot is the fact that those who do recover usually have few residual changes.

Laboratory Findings: (1) Blood—usually shows a moderate leucocytosis with a relative increase of polys. (2) Urine—shows evidence of infection also, with albumin and few casts. (3) Spinal fluid — is under increased pressure and is usually clear. There is no constant cytology. The cells may run 15-20, or may be several hundred. There is a predominance of the mononuclear type. The protein and globulin are usually increased. Colloidal gold reaction varies from no color change to curves approaching the paretic. Changes in the meningitic zone are rare. Sugar reaction is not changed enough to be important.

Diagnosis: Is usually made by the history and time relationship with various exanthematous diseases or vaccination. This is true in most cases although spontaneous cases in apparently healthy individuals do occur.

Cerebral hemorrhage and purulent meningitis may be ruled out by spinal.

Tubercular meningitis may be confusing. The demonstration of the tubercle B; the positive interdermal tuberculin; X-ray of the chest for generalized process; low spinal fluid sugar will usually serve to differentiate. Here, too, history of contact with tubercular patient is of extreme value.

Epidemic encephalitis is also very similar clinically. The absence of an epidemic and the rapid complete recovery of encephalomyelitis disseminata aids in differentiation. Really the question is of rather academic importance anyway.

In poliomyelitis the characteristic distribution of paralysis, absence of sensory changes, and rapid recovery of paralysis in encephalomyelitis disseminata will serve to differentiate. The spinal fluid findings will often help also.

In tetanus we usually have some history of trauma. The history will usually serve to differentiate.

Treatment: Vaccinal—Prophylactic, (1) Vaccinate in infancy, (2) Stop vaccinating in presence of epidemic of any infectious disease, (3) Do not vaccinate any child with history of exposure to any contagious disease, (4) Do not vaccinate a child under par, or without previous physical examination.

Regard contagious diseases as serious.

Exercise strict quarantine regulations to prevent spread of contagious diseases.

Treatment of the disease is purely symptomatic. Convalescing serum may be used, or serum from others recently vaccinated.

Intravenous glucose has been widely employed. By all means keep up nutrition and fluid level. Resort to tube feedings freely.

Nursing care for prevention of bed sores, pneumonia, etc. Change position often, use massage, etc., to prevent contractures. Care to attend to any urinary retention, to prevent pus infection in the urinary tract.

Lumbar puncture is indicated and seems to be best therapeutic agent. It should be repeated as often as is needed for the increase of intraspinal pressure. Personally I believe that we are entirely too conservative in this. The pressure of the spinal fluid is one element entering into brain destruction. To prevent this offers the best means, not only for the present treatment, but to prevent many of the residual conditions.

Encephalitis has always been of interest to me. Even in hospital days we were wondering why more was not said about the spinal fluid in acute infectious diseases. Even then at frequent intervals we would see cases of encephalitis.

In my own small practice, in the last six years I have seen at least one or more cases of encephalitis in every group discussed in this paper, excepting that following the antirabic prophylaxis.

We still know little or nothing about the disease. Every case we see should be regarded as an unexplored land. Our observations clinically or bacteriologically may some day be the means of preventing these cases or at least of offering adequate treatment.



## ASTIGMATISM AS A CAUSE OF SOMATIC DYSFUNCTION\*

EDGAR L. GRUBB, B.S., M.D., Knoxville

**D**URING the past decade contributors to ophthalmic literature have presented many splendidly written and beautifully illustrated articles, the greater part of which have dealt with basic considerations, such as chemistry of the lens and vitreous or described some unusual surgical procedure.

There has been a noticeable absence of discussions dealing with the more commonplace and practical aspects of ophthalmology. This statement is made with no idea of criticism, since the investigators are to be commended not only for the observations made but for the ingenious devices and contrivances invented for this purpose.

In discussing the relationship of general body disturbances to astigmatism, the essayist does not claim credit for mentioning any symptom that has not heretofore been observed; neither will specific reference be given for each individual idea. The importance of the relationship between eyestrain and remote functional disturbances will be reviewed and illustrative cases will be offered to support the contention.

For the sake of brevity, only those symptoms suggestive of general dysfunction will be mentioned. However, in most instances minor troubles referable to the eyes are present.

The constant attempt on the part of medical science to unveil the mystery of life has impressed us with the importance of the physiology of the individual cell. Since circulation and innervation are recognized as the basic systems of control, anything interfering with either may cause a dysfunction and this in turn is recognizable by symptoms.

Until recent years practically all functional disturbances were interpreted as the result of toxemia and sepsis from focal infection but with the advent of endocrin-

ology a third offender was made to work overtime. Many of us recognize the three aforementioned trespassers but contend that eyestrain as a factor disturbing normal physiological functions should be in the front row.

The misdemeanors directly chargeable to eyestrain may consist of anything from slight dyscrasia to complete abrogation of functions and are due to aggravation of the autonomic nervous system which, by recapitulation, is composed of the vagus nerve, excepting the laryngeal portion and the sympathetic system. Such a combination might be regarded as a "syndicate" with a "corner" on the action of the cardiovascular mechanism even to the arterioles; the gastrointestinal secretory apparatus with attendant abdominal viscera; and the entire endocrine chain. Any disturbance of this control system may, as aptly stated by Jones, open a regular Pandora's box of troubles.

For convenience the symptoms may be considered under five main groups. (1) Gastrointestinal disturbances evidenced by abdominal discomfort, gas formation, hyperacidity and nausea. (2) Cardiac dysfunction manifest by palpitation, dyspnoea, precordial, shoulder and hypochondriac pain upon exertion. (3) Vasomotor instability resulting in fainting, flushing, dizziness and cold cyanotic extremities. (4) Nervous instability evidenced by emotionalism, mental irritability, apprehension, depression, excitability, exhaustion and tremor after exertion. (5) Miscellaneous, consisting of insomnia, drawing pain of shoulder and base of neck, often referred to as the "check-rein" symptom, numbness and various parasthesias of the extremities.

That a direct relationship exists between the iris and ciliary muscle with the heart and gastrointestinal tract has been amply covered by Ramsey and objectively proven by Lenensohn who recorded graphic tracings of the normal activity of his own gas-

\*Read before the Tennessee Academy of Ophthalmology and Otolaryngology, Nashville, April 10, 1933.

tric musculature, then by producing astigmatism by means of lenses showed an immediate disturbance. This work is verification of even lay observation since many are disturbed to the point of nausea by standing too near a rapidly moving train, sitting too close to the screen at the movies, or by manipulation of lenses during refraction.

Those of us who have done general practice have been impressed with the number of patients complaining of gas on the stomach, hyperacidity and so-called "indigestion" but upon careful laboratory and X-ray examination no pathology can be found.

There is no doubt that in many cases these symptoms are due to autonomic nervous system disturbance resulting from continual eyestrain, proof of which can be better explained by the case of Mrs. W, a rather slender and anemic woman about 68 years of age, who complained of insomnia and nervous instability that was accentuated by use of her eyes for any purpose or the exposure to bright sunlight. In order to minimize this discomfort a dark pair of goggles was worn over her glasses which were +4.25 spheres each eye. During the consultation the presence of a long standing indigestion, manifest by hyperacidity and gas formation, which had not been relieved by her physician, was mentioned. Violent nausea was induced by the tests and the usual dispensary manipulations. A +4.50 sph. +.50 cyl. ax. 90 each eye was prescribed for continual wear and immediately an improvement was manifest which resulted in complete relief in three months.

Further evidence that astigmatism is the causative factor might be offered in the case of Mr. R, an intelligent man about 57 years of age, who complained for many years of gassing stomach, hot eructations and inability to sleep at times. The addition of a 50 cyl. to his old spherical correction resulted in relief. Some months later his glasses were broken and the old spheres were substituted. A gradual return of symptoms was evident and relief obtained only after new lenses were procured.

These cases emphasized the importance of residual astigmatism which so often has

been ignored when in combination with rather high spherical errors.

Many of the patients presenting themselves had not heretofore worn glasses, neither is there an impairment of vision. On the contrary even subnormal and quite enduring sight is often the case thus again demonstrating that the strain of overcoming small errors may be attended by remote symptoms while the inability of accommodation to compensate for large ones is manifest only by lack of proper visual acuteness.

That oculo-visceral reflexes subjectively may resemble organic pathology especially that of gall bladder disease, visceroptosis and chronic appendicial inflammation has been brought out by earlier observers, however, we would emphasize this feature by presenting the case of Mrs. C, 36 years of age, who for the past two years complained of abdominal discomfort to the point of nausea and tenderness probably more accentuated on the right side. Because of the persistence and lack of other pathology removal of the appendix was contemplated. Cognizance of an existing refractive error and suggestion on the part of a friend stimulated the consultation, however, the procedure was approached with total lack of confidence since she stated that glasses would permit more comfortable reading while in the hospital. Under mydriasis +1.00 cylinders at axes 50° and 135° respectively were prescribed for continual wear resulting in gradual cessation of symptoms.

The laity and some of the profession have associated eyestrain with individuals using their eyes for near work. However, such is not the case since symptoms have appeared with equal frequency in mechanics, farmers, teachers and office workers. The gastrointestinal symptoms have appeared practically altogether in middle-aged and elderly individuals and women are the more frequent victims.

Following the late war there appeared numerous articles and books describing and discussing a symptom complex of vasomotor and nervous instability combined with cardiac disturbances which was termed "Neurocirculatory asthenia" and "effort syndrome." Notable among these was "The



Nervous Heart" by Wilson and Carrol, who had wide observations in the British and American camps, in which there was a tendency to consider the heart muscle and innervation as prime factors in cardiac disease, thereby recognizing not only infections and toxemia but also the psychic and emotional sources of trouble. The outstanding feature of neurocirculatory asthenia is the multiplicity of symptoms and absence of findings. At first it was interpreted as the result of endocrine dyscrasia, however, subsequent investigation did not corroborate since it appeared more often in individuals with no demonstrable imbalance. Toxemia and sepsis were advanced but ultimately failed in the solution. Some investigators concluded that a "constitutional inferiority" is the explanation while others contend it is the result of a multitude of physiological deficiencies.

Vital energy is known to be consumed by emotional stress, cerebration and the functioning of organs. The amount of available energy is not known, however, in all probability is variable in different persons. In those individuals whose supply of vital energy is inherently low and who are possessed with an unusually sensitive autonomic nervous system that keeps them almost depleted, we can readily see that continual strain from an astigmatic error might be "the straw that broke the camel's back." That the world is full of astigmatics, but relatively few suffer any untoward symptoms, would further substantiate the necessity of susceptibility.

The frequency with which favorable results are obtained by exacting refractions in those persons complaining of dyspnoea, palpitation and exhaustion from mild exercise, cold clammy and cyanotic extremities, fatigue and excessive coursing of the emotions is most convincing and is better illustrated by the case of Mrs. J, a well proportioned middle-aged woman who stated that she had never been able to exercise like others and had never done her housework because of these symptoms. After thorough examination including basal metabolic rate her internist suggested the possibility of a refractive error. A + 75 sph. + 1.25 cyl.

ax. 90 each eye was worn, but under drops a + 1.75 cyl. ax. 90 right eye and ax. 80 left eye was given for continual wear. Three months later she had gained seven pounds in weight and at this writing is caring for her household without complete exhaustion and is markedly relieved of the other symptoms.

This type of functional disturbance has not been peculiar to any age group but appeared with equal frequency in children of the school age in which a predominance of cardiac symptoms has been fairly constant, especially the association of pain in the left hypochondrium and shoulder with tachycardia after exertion. Older observers have attributed the abdominal pain to the heart tug on the diaphragm while the shoulder pain could very well be interpreted on the same basis as that of angina pectoris.

An illustrative case is offered in that of Master G, an anemic boy nine years of age, whose history states that he was easily winded, had tachycardia with abdominal and shoulder pain from running, was emotional and often cried when antagonized by playmates. —1.00 cylinders at axes 50 and 120°, respectively, were prescribed for constant wear and six months later the mother reports a "nice" gain in weight and improvement in his general condition with marked increase in stamina and an ever present desire to engage his playmates in fistic combat.

Some years ago the opinion was advanced that temporary aphasia and loss of consciousness resembling for the time being such organic conditions as epilepsy and apoplexy could very well be the result of cerebral anemia or hyperemia caused by derangements of the vasomotor sympathetic system. Following this line of thought surgeons have destroyed the cervical ganglia and stripped the arteries of their coverings with results that amply support this hypothesis.

The possible relationship of eyestrain to such temporary syncopeic attacks is illustrated by the case of Miss H, a girl 18 years of age who was very timid, emotional, blushed at the slightest intimation of strangers and for two years suffered fre-

quent attacks of temporary unconsciousness when excited or upset. Her physician attributed her condition to incomplete establishment of the menstrual cycle. However, there was a complete cessation of the attacks within three months after absolute correction of her off axis astigmatic error. In the opinion of the essayist her improvement was not coincidental but the result of removal of strain which in the presence of her marked vasomotor instability was sufficient to temporarily abrogate certain functions.

Further supportive evidence is offered in the case of Mr. C, a healthy appearing man 48 years of age, who came to me during the writing of this paper, complaining for several months of severe attacks of dizziness even to the point of falling. During the conversation he was seized with such an attack and lapsed into unconsciousness for probably two minutes. A slight slowing of the pulse rate was noted but the most striking observation was a marked hyperemia of the left ear and adjacent part of the face. His glasses, which were + 50 cylinders ax. 90 each eye with an add for near, had been worn only for a few months. Careful refraction failed to reveal any error and the glasses were discarded and with this correction of artificial astigmatism a rapid disappearance of symptoms resulted.

In checking the literature for similar observations it was found that Gondolez first described falling out and unilateral congestion of the ear and face, which he considered an index of the cerebral circulation, attributing it to the vasomotor disturbance of eyestrain.

It has been the intention of the author to illustrate with the case reports offered that the symptoms of the patient may be those of only one group or may consist of those of any combination of the various symptom groups mentioned earlier in the discussion. Some individuals complain only of gastrointestinal disturbances, another may present a typical picture of neurocirculatory asthenia, while others often show a predominance of certain symptoms, i.e., myesthetic with early fatigue, psychasthenic with its depression and morbid fear,

vasomotor with its dizziness and fainting or cardiac with dyspnoea and pain. In some patients the complaint is constant and persistent, evidencing no relationship to habits and conduct. Others may induce or accentuate their symptoms by exercise, while in some instances the disturbances may have their inception at the time of some severe illness.

A surprising number of people suffer to a greater or lesser degree from some of the functional conditions mentioned in this paper. Complete and exacting histories relative to general and remote complaints are necessary since the laity and part of the profession have never associated eyestrain with anything but headache and poor vision.

The frequency of happy results following correction certainly justifies a closer cooperation between the general practitioner or internist and the oculist. Those patients with no pathology to explain their symptoms are entitled to a complete and painstaking refraction for the eye is just as much a part of the body as the appendix or gall bladder, and the relief obtained from correction in some instances is greater than that from the most ambitious offering of surgery.

The more critical have attributed the results to expectancy of the patient and master psychology on the part of the oculist, an argument which has long since been proven false by the return of symptoms from turning of the cylinder in the frame, changes in refraction and other causes which the patient did not know or control.

Conduction of the tests for the objective outlined in this paper is one of the most nerve-racking ordeals requiring a profound knowledge of human understanding, at demanding all the resources at one's command, for the patient's intelligence, cooperation, accuracy of observation, and discriminative ability must be taken into consideration and all answers must be checked relative to consistency and contradictions.

Discrepancies in observation of different individuals impress one with the accuracy of a foremost contemporary who said: "There are people supposedly educated who



if given three answers as to which was roundest, a cracker box, a stick of wood, or a sphere, would cast one vote for each candidate with utmost equanimity."

All patients that have not completely lost the accommodation and have no evidence of increased tension are tested under cycloplegia. Not uncommonly are individuals 45 or 50 years of age subjected to drops, however, a miotic is instilled at the completion of the examination. The single aperture test cabinet has been quite satisfactory since a larger variety of type combinations are made easily available. For the final fixing of the cylinder axis the smallest visible letter F is used and the lens rotated in each direction until blurring is noticed. The point midway between is considered the tentative axis verified by acuteness of vision and in cases where the mental measure permits the patient is allowed to rotate the cylinder for substantiation. The post-cycloplegia check up being in agreement, glasses are given for continual wear and the patient instructed that any possible relief will not be perceptible for weeks, or even months, since these functional disturbances are slow in their inception and of necessity are reluctant to disappear. Failure to inform patients of this lapse of time may cause them to discard the glasses, bringing loss to themselves and disrepute to the oculist.

### CONCLUSION

It is the contention of this paper that many functional disturbances can be markedly improved and in some instances completely relieved by the absolute correction of astigmatism.

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### DISCUSSION

DR. H. C. SMITH (Nashville): Dr. Grubb has selected an extremely interesting subject upon which to construct his essay. It draws to the attention the wider therapeutic possibilities of refraction, and reminds us again of the great importance of accuracy in this work. A review of the articles to which he has referred for his material would renew the interest of a conscientious refractionist.

Recognizing the fact that the intrinsic ocular muscles are of similar derivation embryologically, and that they have the same nerve control as the musculature of the gastrointestinal tract and the cardiovascular system, it is not a far-fetched conclusion that derangements of ocular muscle function may be related to dysfunction of the organs named. Lebensohn's experiment has proven, at least, that normal gastric muscle activity is definitely disturbed by ocular muscle effort in overcoming induced astigmatism. The oculo-cardiac reflex which has come into use as a diagnostic aid in neurocirculatory asthenia demonstrates the nerve connection between the eye and heart.

The balanced action of cranio-autonomic and sympathetic systems in controlling heart, stomach, and eye muscle is quite interesting in that stimulus from the one neither inhibits nor excites activity in all three; but has an effect peculiar to the organ which it innervates; the unstriped muscle responding according to its location, so to speak. The ocular musculature, whose activity is probably more easily observed than that of the visceral musculature, has lent itself favorably to research; and has, therefore, been the means of revealing explanations for some of the so-called remote symptoms which arise from eyestrain.

Dr. Grubb's five groups of symptoms referable to eye stress have all been met by most oculists. They are, however, most often met first by the internists or general practitioners. Considerable judgment is required of the oculist who would elicit, and properly interpret, the complaints in all cases; and I do not doubt that many of them are presented frequently to be unheeded.

As has been pointed out, susceptibility of individuals to somatic dysfunction from eye stress varies widely; and, certainly, results from correction of errors in refraction in those who are susceptible must be expected to show considerable variance. The oculist will most often have the opportunity of performing the last experiment in treatment—focal sepsis and endocrine disturbances having been first investigated by the internist. A careful, systematic examination of the visual error, not forgetting extra-ocular muscle balance, and power, together with accommodation, may accomplish relief of symptoms from more remote disturbances than those commonly considered as due to eyestrain.

Accurate cylindric correction, coupled with correct addition or reduction of spheric strength in lenses, presents a fascinating problem, the mas-

tery of which repays many times in satisfaction to both the patient and the physician the effort and inconvenience required. Although, as in other medical questions, the correction of astigmatism does not offer guaranteed relief, the fact remains that ocular effort to overcome the error is productive of general body disturbances and the oculist has always before him the possibility of rendering service to sufferers from such disorders. Dr. Grubb is to be congratulated upon having presented this practical, though perhaps not universally recognized, subject to us.

DR. WILLARD STEELE (Chattanooga): I want to thank Dr. Grubb for bringing this timely subject to our attention. He has given us food for thought.

I feel that he has invited your attention to a most essential matter, one that so many of the oculists of today are not keeping faith with their patients on.

Some of us despise refraction, and when called upon to refract a pair of eyes, do so as quickly as possible. A few have assistants or nurses to do the work for them, and I know of one prominent eye man that refers his refractions to an optician.

These are some of the reasons why the average oculist's refractions have dropped off alarmingly. The public feel that they get as good a service at optical shops as from eye doctors.

I feel that possibly the profession has been responsible for this state of affairs, and I urge each and every one of you to do better and more thorough refraction.

Dr. Grubb uses the expression, "nerve-wracking," in connection with the proper refraction of a patient. I feel that that expression is too harsh, and I feel that each individual makes refraction what he chooses.

I agree with Dr. Grubb to a great extent about the many remote symptoms that are relieved by proper correction of astigmatism, but I have not noticed as many serious complaints cured by proper cylinder lenses as he mentions.

The essayist states: "That the world is full of astigmatics, but relatively few suffer any untoward symptoms, would further substantiate the necessity of a susceptibility."

Th's susceptibility or allergic condition as you might say can so easily be the reason that some few people have untoward symptoms while the

great majority go along without any symptoms, though afflicted with an equal amount of astigmatism.

We are fortunate indeed that most patients' eyes tolerate approximate correct fitting lenses, for it is my firm belief that, taking into account the patient's possible wrong replies to questions and tests, plus your own personal chance of error, we could refract the same patient on succeeding days and get slightly different findings.

I believe we should consider most carefully all patients that come under our care, the possibility of astigmatism as a cause of their dysfunction, and by careful refraction give them the relief so eagerly sought.

I am in entire accord with Dr. Grubb's remarks on residual astigmatism, in connection with marked spherical error. At times it is absolutely essential for a particular patient to have included in his correction the small amount of astigmatic error found, while I am frank to say many times the addition of a small cylinder strength, especially if odd axis, seems to upset the entire nervous system, and to produce somatic dysfunction.

In conclusion, it is often the personal equation in each patient, each pair of eyes that demands all the skill and resources of the physician to get excellent results, and I urge you to give your whole attention at each refraction to all bits of history, that may aid, consider the patient as a whole, not merely as to eye alone, do careful and painstaking refraction, and combine a little common sense with all this and I feel sure your patients will get relief and you, satisfaction.

DR. J. B. STANFORD (Memphis): It is with pleasure that I have listened to such a good paper from one of our younger members, and I wish to commend Dr. Grubb on doing such good work. However, I should regret it if any member of this group got the idea that he can cure all sorts of general ailments by correcting refractive errors. I have done many thousands of refractions and, since I like to refract, these were not done casually. In all these cases I can't recall one of gall bladder disease, angina or constipation that I have relieved with glasses. Sensible advice should be, and often is, given the patient as to hygiene and conduct, therefore the patient often profits generally from his consultation with the oculist, but the relief he gets from glasses is the relief of the symptoms of eyestrain.



## MYOMA MALIGNUM\*

EDWARD D. MITCHELL, JR., M.D., Memphis

THIS CONDITION was first recorded in 1845 by Lebert but Virchow and especially J. Withridge Williams were the first to prove that myomata could undergo sarcomatous changes. Since that time many reports have appeared in the literature on the subject, yet, the frequency of its occurrence is still debatable. Many of the diagnoses are questionable, for in many cases it is difficult to determine from the variation in cytology whether the specimen is mesoblastic in origin or of epiblastic origin. However, a malignant myoma is a rare growth and most authors agree that its occurrence is about one per cent or less. Winter found twenty-seven sarcomas in 753 fibroids (3 per cent), Masson found forty-four sarcomas in 4322 fibroids (1 per cent), and Dripps found three sarcomas in 541 fibroids (0.55 per cent). Kasman believes sarcomas are more common than is generally supposed. In the Koster Clinic he states there were three sarcomas in 154 fibroids (2 per cent). He reports 72,116 myomas with 300 sarcomas, an incidence of 0.41 per cent. In reviewing the literature he has collected 393 reported cases of uterine sarcoma and adds three cases of his own.

In Memphis the statistics from three of our leading hospitals over a period of from one to ten years yields 2123 cases of fibroid uterus. There were only four sarcomas, an incidence of 0.18 per cent. It is probable that the variation in incidence found by different pathologists is due to the thoroughness with which the specimen is studied and the interpretation given to these pleomorphic cellular groups. The malignant growth may be small and encapsulated therefore overlooked unless the area involved has been opened either at the time of operation or later for study. In the case I am reporting sarcoma would not have been suspected had the uterus not been opened for inspection after the completion of the operation. On this account the

laboratory was requested to make a careful pathological survey of these tissues and this was accordingly done. The pathological study is difficult and the final conclusion often doubtful due to the similarity of the sarcoma cells to carcinoma cells.

Grossly the sarcomatous area is more or less homogeneous, yellowish-white and opaque. The typical shiny, pinkish-white muscle whorls of the myoma are lost. The encapsulated area may be only slightly or almost completely composed of the malignant tissue. Usually the capsule is intact as it was in our case. The malignant tissue is soft in consistency, friable in nature, and shells out with much more difficulty than the benign muscle tissue. Frequently hemorrhagic areas are present in the growth giving a reddish or brownish color.

Microscopically the cells are usually spindle in shape but may be mixed and composed of spindle, round and giant cells with the presence of mitotic figures. The cells are arranged in columns and found to be intermingled with the muscle and fibrous tissue.

The condition is rarely suspected before operation unless extension beyond the capsule has taken place. When it is intracapsular there are no symptoms referable to the malignant growth itself but the symptoms are those of the fibroid. As the tumor grows leucorrhea, hemorrhages and pelvic pain may make their appearance. In our case leucorrhea and pelvic pain were the factors which caused us to urge immediate operation. Of course suspicion should always be cast upon the patient who manifests evidence of bleeding following the menopause. It will be noted in the history that this patient was advised to disregard bloody flow following the menopause by several years. As metastasis takes place there are the usual symptoms of malignancy. In a fibroid showing rapid increase in size or evidence of softening, malignancy should be suspected.

Since the diagnosis as a rule is not made until the specimen has reached the labora-

\*Read before the Memphis and Shelby County Medical Society, Memphis, October 4, 1933.

tory supravaginal hysterectomy is the commonest procedure. If the diagnosis is made at or before operation and metastasis has not taken place panhysterectomy is the method of choice. In any event radium should be applied to the cervix, if left in situ, and deep X-ray therapy instituted.

The prognosis is always grave but when disintegration of the capsule has not resulted the hope for cure is more encouraging. The more extensive the growth the less the chance for cure. The myoma malignum is said to be the least dangerous and the most common of the uterine sarcomas. Unfortunately, though, some of these cases rapidly metastasized. Dripps reports two cases in which one developed metastasis within three months although there were no signs that the malignant cells had passed through the capsule and deep X-ray therapy had been early instituted and pushed to the limit of tolerance. The case herein reported and a case reported by Kasman had each received radium in the uterine cavity and each later developed sarcoma.

When we consider nearly one per cent of fibroid tumors show sarcomatous changes one may well pause for thought and seriously consider hysterectomy as the operation of choice for all fibroid tumor cases regardless of size. Radium and X-ray therapy when used for small tumors have given brilliant results and are usually free from danger. On this account I am not yet ready to cast these agents aside and advocate hysterectomy in all cases of fibroid tumor of the uterus.

### CASE REPORT

Mrs. T. M., age 49, nullipara, was admitted to St. Joseph Hospital, September 14, 1931, complaining of pelvic pain and leucorrhea. The menstrual history was negative. The menopause occurred at age 43 and there had been no further bleeding until 1930, five years later, when she began to flood at irregular intervals. She visited one of the noted clinics of this country and was advised that treatment was unnecessary. Two months later, the flow continuing, she came to me for advice.

On examination there was found a fibroid uterus about the size of a large orange with

several nodular projections. Hysterectomy was advised but declined. The application of radium was then suggested and accepted. The uterus decreased to one third its original size and the bleeding ceased. Ten months after the irradiation leucorrhea and pelvic pain made its appearance and two months thereafter she reported to the office for further advice. The uterus was found smaller than at the first examination, freely movable but very tender on palpation. There were no masses in the pelvis. Immediate hysterectomy was advised and accepted. Hysterectomy was performed in the usual manner. Abdominal examination failed to show enlarged lymph glands or other evidence of metastasis. Recovery from the operation was uneventful.

The pathological report by Doctor McIntosh was as follows: The specimen is a large, irregular, very firm, partially dissected uterus. The cut surface presents a large, rounded, firm, bulging myoma. On the edge of this is soft brain-like grayish tissue. The uterine cavity is smooth and distorted and the endometrium is intact throughout. The muscularis is thin and very fibrous. The gross appearance is that of malignancy and multiple myomas.

Microscopic examination is confirmatory of sarcoma and myoma. The former is medullary with marked pleomorphism and numerous mitotic figures. There is a moderate amount of round cell infiltration.

Diagnosis; Malignant sarcoma and benign myoma.

Thirteen days after operation deep X-ray therapy was administered by Doctor Heacock. On November 9, 1931, examination of the pelvis was negative. Further X-ray treatments were given. On December 30, 1931, there was a mass in the cul-de-sac, the lungs still did not show any evidence of metastasis and again X-ray treatments were given. About one month later the patient died of organic heart disease the result of a mitral stenosis that was present at the first examination.

### SUMMARY

1. Myoma malignum occurs in about one per cent of cases of fibroid tumor of the uterus.



2. It is often a rapidly metastasizing growth.

3. Diagnosis is rarely made before operation.

4. Complete removal of the uterus followed by deep X-ray therapy is the treatment of choice.

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#### DISCUSSION

DR. WM. T. BLACK (Memphis): This is a very interesting case of Dr. Mitchell's. I believe that these sarcomatous degenerations of fibroids are developed from mesoplastic tissue. The majority of them occur in women about 50 years of age. We do have them, however, in much younger women, even children at times have sarcomatous conditions of the uterus. They occur both from the muscular tissue and also from the mucosa, and that type developing from the mucosa can readily be diagnosed, not only from the hemorrhage, leucorrhea, and rapid growth, but also at times by looking at the uterus you will find a projection of the tumor mass through the os.

The percentage Dr. Mitchell gave of 1 per cent of fibroids undergoing sarcomatous degeneration is correct, instead of 4 per cent as formerly taught. Carcinomas occur about 25 to 50 times oftener than sarcomas in the uterus. We never know when we have a sarcoma present, when removing fibroids, and, as Dr. Mitchell has said, all tumors should be split open and observed with the naked eye. When you find a homogeneous mass, very soft in consistency, without trabeculae, it is very suggestive of sarcoma. A biopsy should be obtained and if you find, as Pemberton states, irregularity and inequality in size, arrangement, and shape of the cells with mitotic figures—then you are sure of having a sarcoma. It is not at all impossible to remove a benign fibroid tumor from the uterus and leave a sarcoma in a fibroid left behind.

The point brought out about doing a hysterectomy in all these cases is all right, but in younger women we should do a myomectomy whenever possible, so that they may have the opportunity of having a child. The supravaginal operation is the operation of choice in fibroids.

The question of irradiation in the treatment of sarcoma is a debatable one, but should be used in far advanced cases and in children. If possible

a hysterectomy followed by irradiation is the ideal treatment.

DR. J. A. McINTOSH (Memphis): We all agree that Dr. Mitchell has presented to our society a subject that is not hackneyed. In it are several unique features. One that a pathologist would notice is an instance of a malignant uterine tumor that could not be detected by diagnostic curettage. Curettage of the uterus reveals most malignancies because the commonest malignant tumors originate from its lining.

Another unique feature is the age, being a rather elderly patient, 49, with a sarcoma.

Our guide to identifying sarcomas in the gross is the soft brain-like appearance of the tissue. A microscopic section shows medullary tissue, mitotic figures with pleomorphic nuclei, and unequal distribution of the chromosomes.

In Dr. Mitchell's case there was marked difference in the mitotic figures. The division of the chromosomes in many of the mitoses was 75 per cent on one side and 25 per cent on the other.

If we were entitled to speculate about the cause of tumors, we might speculate about as follows: Since we have good evidence of hormonal effect on certain structures that develop hyperplasia it seems logical to suppose something similar is taking place in individuals who have malignant hyperplasia.

DR. P. C. SCHREIER (Memphis): Unfortunately, I did not hear Dr. Mitchell's paper in its entirety, but the subject is of tremendous interest and I want to refer to a point that maybe he has already referred to. I think it is interesting to call attention to the differential diagnosis between other various degenerations and malignant degenerations of fibroids, because one always thinks of the possibility of malignancy. However, it occurs so infrequently in fibroids that one hesitates in the face of it being non-malignant even though it may present the appearance of malignant degeneration.

The common degeneration is the red degeneration. With this you usually get some systemic degeneration, and with the edema and the hyaline degeneration, it makes one suspicious of malignancy. My feeling is that one should be very careful at drawing the conclusion that a fibroid is malignant.

Another point of interest from a pathological standpoint is there are two types of malignancy of the uterus of the connective tissue. There is a primary malignant tumor of the uterus not originating in the fibroid, but a primary sarcoma, as differentiated between the malignant degeneration of the fibroid. Some of these malignancies begin as malignancies. Others as benign and later become malignant. There are authors who draw a very careful distinction between them. The prognosis of a malignant fibroid is better than in a case where the malignancy began primarily.

DR. E. D. MITCHELL, JR. (Closing): There is only one point that I should have added in the case reported. She was curetted when the radium was placed in the uterine cavity. No malignancy was found.

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H. H. SHOULDERS, M.D., Editor and Secretary

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## EDITORIAL

### THE LIAISON COMMITTEE

In every organization the question often arises as to why such and such a committee was created and as to what it has accomplished. Such questions might be raised concerning the Liaison Committee of the State Association.

It might not be out of place to sketch briefly the events which led up to the formation of this committee and to cite a few instances of the efforts it has put forth.

Prior to the reorganization bill, sponsored by the late Governor Austin Peay, the State Health Department was governed and controlled by a board composed of three practicing physicians and the Commissioner of Agriculture. Large powers were vested in this board. The board in turn used the powers with judgment and discretion. The policies of the department were formulated by the board after mature deliberation, and the executive officers carried out the policies thus formulated. The reorganization bill had the effect of abolishing the board and vesting its powers in one officer—the Commissioner of Health.

Soon after this change was made there began to develop over the state a sense of difference between the members of the medical profession at large and the department of health. Prior to the reorganization bill there was harmonious cooperation between organized medicine and the state department of health.

Realizing that no public health department can function properly without the support and the cooperation of the medical pro-

fession, a movement was launched which had as its purpose the creation of a committee to represent the State Medical Association in conference with the health department with a view to smoothing out differences which might arise from time to time.

In 1928 such a committee was created by resolution passed by the House of Delegates. This committee failed in its purpose. In 1931 a new Liaison Committee was created by amendment to the by-laws. This committee has served under the chairmanship of Dr. W. C. Dixon ever since its appointment.

The Liaison Committee recommended to the House of Delegates in 1932 the enactment of a law creating a board of health or a council of health, with powers to make regulations for the department. The House of Delegates unanimously approved this recommendation. The bill was drawn and introduced. After being approved by the Department of Public Health through its commissioner, it was passed by the House and defeated in the Senate by a narrow margin.

Its defeat was accomplished by individuals and in ways which served only to intensify and widen the existing breach between the State Health Department and the medical profession of the state.

Notwithstanding the defeat of the suggested bill, the Liaison Committee has continued its activities in behalf of the profession, and it seems appropriate at this time to cite one example of the work which it has been doing and of the difficulties it has encountered:

In April, 1933, the Madison County Medical Association filed with the Liaison Committee a complaint as to the manner in which the State Health Department was conducting its tubercular clinics.

There was also filed at the same time by Dr. W. G. Saunders, of Jackson, Tennessee, a statement showing that one of his patients, able to pay for medical services, whom he had arranged to have X-rayed, had been taken over by the Health Department, without the courtesy of consulting Dr.



Saunders. This patient was examined, and had an X-ray of the chest made.

The Liaison Committee presented the statements mentioned above to Dr. Bishop on June 8, 1933, and in the concluding paragraph of the letter of transmission made the following statement: "*The Liaison Committee would appreciate a written statement from you as to what steps, if any, you intend to take to correct this practice of your department which we feel is wrong and unjustifiable.*"

Under date of June 10, 1933, Dr. Bishop replied in substance that he was having Dr. Crabtree, in charge of the service in tuberculosis control, make a direct inquiry. On September 5, 1933, having had no reply from Dr. Bishop, the Liaison Committee again wrote him as follows: "The Liaison Committee would appreciate a statement from you with reference to this matter, and also as to whether it is your policy to continue extending such services to people who are able to pay for them." On September 16, 1933, a reply was received from Dr. Bishop, quoting from a report he had received from Dr. Crabtree concerning the Madison County complaint, and making certain general observations of his own. He also said that the correspondence had been referred to the Advisory Council on Public Health.

On September 27, 1933, the Liaison Committee replied to this letter, and the concluding paragraphs were as follows: "*Nowhere in your letter do you answer the question asked in a previous communication from the Liaison Committee as to what steps, if any, you intend to take to correct this condition. You refer in the last paragraph of your letter to the Advisory Council. We are familiar with this council, and are aware that, as its name implies, it is purely advisory in character, and that you are in no way bound to accept any advice which it may give. The profession of the state has no voice in the naming of this council, and we have the impression that its members are largely your personal selections. You are the responsible head of the Department of Health, and the particular*

activity of that department under discussion was instituted long before there was an Advisory Council; consequently we request an answer from you to our question as to what steps, if any, you intend to take to correct this activity of your department."

On October 18, 1933, still having received no answer to the oft-repeated question, the Liaison Committee again wrote Dr. Bishop, asking for "the courtesy of a reply to the request which we have made to you on several occasions, beginning on June 8, 1933, as to what steps, if any, you intend to take concerning this matter. We feel that this is a fair question, and that four months is sufficiently long to wait for an answer." On October 27, 1933, Dr. Bishop replied (the following paragraph is quoted): "I was under the impression that in a former letter I advised you of the discontinuance of all tuberculosis diagnostic clinics in Madison County, or the fact that there would be no clinic service in other than counties with full-time health departments during the present biennium. This, of course, includes Madison County. I thought that this answered the question which you raised."

It must be apparent to any fair-minded person from this answer that Dr. Bishop had paid very little attention to the question asked, or else hesitated to give a specific reply.

On November 8, 1933, another letter was written him, in which the question was repeated: "What steps, if any, do you intend to take concerning the practice of your tubercular clinics in examining all who apply, regardless of their economic status? We would like for this information to cover all the counties of the state, whether they have full-time health units or not."

At last Dr. Bishop made a specific reply covering the operation of these clinics, much of which need not be quoted. The information for which we had patiently waited is included in one line: "All residents of Tennessee, irrespective of financial status, are eligible."

Dr. Dixon referred the correspondence sketched above to the Board of Trustees for examination and criticism. The Board

of Trustees, after reviewing all the evidence and correspondence, took action as follows:

(1) That the sentiments expressed by the chairman of the Liaison Committee in his correspondence with the Commissioner of Health are heartily approved.

(2) That members of the Madison County Society were justified in their complaint, and the State Health Department on its part had offered no evidence to controvert the charges that had been made.

(3) That the Liaison Committee was entirely correct in its attitude toward the so-called Advisory Council of Health in that this council cannot be accepted as being representative of the State Medical Association in view of the fact that its membership was appointed entirely by the Governor, apparently on recommendations made by the Commissioner of Health.

(4) That the Liaison Committee was entirely within its rights in refusing to take up the matters considered with the Advisory Council of Health rather than with the Commissioner of Health, in view of the fact that the Advisory Council of Health has no power to make or alter any regulation except by the consent of the Commissioner of Health, in whom the power is vested.

(5) That the Board of Trustees considers the Commissioner of Health's final reply to the Liaison Committee to the effect that his case-finding units "are instructed to furnish X-ray services, etc., to any and all citizens of the state of Tennessee who might apply for such services, irrespective of their financial status," as being socialistic, tending toward state medicine and constituting an unfair and an improper expenditure of public monies.

When one reviews the facts, it becomes increasingly obvious that a change in the administrative control of our public health department is urgently necessary.

A board or council of health, composed of the proper sort of people, appointed in the proper way for a sufficient tenure of office, can remove from Tennessee the menace which exists when one single individual is clothed with such unlimited powers and

supplied with enormous sums of money to expend as his notions may dictate.

The individual members of the Tennessee State Medical Association should think long and well on this subject. The problem of accomplishing such a change is theirs. Lay people are misled by propaganda. Politicians are attracted by the patronage attached to such appropriations. The correction of these evils can be attained through the united and continued support of each and every member of the medical profession in their effort to insure the passage of a proper bill creating a board of health by the next Legislature.

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#### THE DIPHTHERIA DEATH RATE IN TENNESSEE

In a recent issue of a statistical bulletin issued by the Metropolitan Life Insurance Company, Volume XIV, No. 12, for December, 1933, is found some interesting material, among which is the following: "No single development in the entire field of public health has been more widely acclaimed than the reduction in mortality from diphtheria. This disease in the country as a whole has become a very minor cause of death."

For the year 1932, according to this bulletin, the death rate from diphtheria the country over was 4.5 per 100,000 population. This death rate, of course, is infinitesimal, but this low death rate is not enjoyed by several states. There are twelve states with a death rate quite above the average. Among these is Tennessee with a death rate of 9.2 per 100,000, which is just a little over twice the average rate for the country as a whole. Not only is this true, but Tennessee had the sixth highest mortality rate of all the states in the Union. The figures further show that the death rate from this cause increased by 28 per cent from 1930 to 1932. These mortality figures are reliable. They are also astounding for several reasons:

First, in the period covered by these figures the state department of health of Tennessee expended the largest amount of



money the state ever appropriated for the department.

Second, diphtheria prevention was used as a means of frightening the public and the Legislature into an attitude of appropriating these large sums of money with the idea that the disease would be prevented.

Third, the department is supposed to have majored, so to speak, in the prevention of communicable diseases.

These figures show that the appropriation of money failed to accomplish the purpose sought. They show that, in spite of largely increased appropriations for prevention, there is actually an increase in mortality. One of two conclusions is possible: First, the disease is not preventable by state appropriations; or second, there must be something wrong with the policies of the department which controlled the expenditures.

It is interesting to observe the mortality rates from this disease in other states with less appropriations than Tennessee. Take, for example, Michigan. This state follows an entirely different policy with reference to diphtheria prevention. The legislative appropriation in Michigan for the year 1930 was \$529,450 to serve a population of 4,842,325, and Michigan had a diphtheria mortality below the average for the country as a whole.

In Tennessee the appropriation was \$784,572 to serve a population of 2,608,759, and we experienced a mortality more than twice the average for the country.

Take another Southern state. Louisiana had a mortality of 6.7 death rate per 100,000, with an appropriation of \$397,071.

From these data it must be obvious that it is perfectly possible to squander money in the name of public health. It is perfectly possible to expend enormous sums of money in the support of a public health organization which accomplishes far more in a political sense than it accomplishes in the way of disease prevention.

As has been pointed out in these editorial pages, there is very little relationship between the amount of money spent by the department and the amount of good done

by the department. The figures seem to indicate that the more money that is spent and the more political organizations that are created the higher our mortality rate will be. This will always be true so long as unsound and foolish policies are followed.

This is not an argument against a health department, nor is it an argument against liberal appropriations for a health department. It is an argument against unsound policies by a health department.

The public too soon forgets that the major scourges of mankind were conquered before any of the so-called modern health departments were created. Take, for example, smallpox, cholera and yellow fever. These diseases were conquered by the expenditure of a relatively small amount of money in the promotion of sensible, sound policies.

Another fact stands out: that the general reduction in mortality from preventable diseases has been taking place over a period of fifty years; that the reduction has been gradual and bears little or no relationship to the amount of money spent by public departments.

The advances of science and the practitioners of medicine, as always, make the major contributions to these accomplishments.

## WOMAN'S AUXILIARY

*President*-----Mrs. W. O. Floyd, Nashville  
*President-Elect*----Mrs. Willis Campbell, Memphis  
*Press and Publicity* -----  
 -----Mrs. W. W. Wilkerson, Jr., Nashville

### SAVE THE DATE

State Meeting of the Tennessee Woman's Auxiliary to the American Medical Association at Chattanooga, April 10, 11, 12.

### REPORTS OF LOCAL AUXILIARIES

Knox County—Mrs. H. E. Christenberry, President.

We regret that no January report was received from Knox County.

Shelby County—Mrs. Percy Toombs, President.

The auxiliary held its annual election of officers at the January meeting at the University of Tennessee. The list of officers is as follows:

President, Mrs. Percy Toombs.

President-Elect, Mrs. W. S. Lawrence.

First Vice-President, Mrs. E. C. Mitchell.

Second Vice-President, Mrs. B. F. Turner.

Third Vice-President, Mrs. Percy Wood.

Fourth Vice-President, Mrs. E. M. Holder.

Recording Secretary, Mrs. D. H. Anthony.

Corresponding Secretary, Mrs. Neuton Stern.

Treasurer, Mrs. Henry Rudner.

Historian, Mrs. Edward Thompson.

Board of Directors:

Mrs. Willis C. Campbell.

Mrs. W. T. Black.

Mrs. Alphonse Meyer.

Mrs. W. Likely Simpson.

With Mrs. Toombs' assumption of office, the auxiliary begins its seventh year of service. In the six years of its existence it has rendered valuable aid to the medical profession in the way of benevolent undertakings, by its assistance of students, and by its educational work.

One of the outstanding accomplishments of Mrs. Black's administration has been the establishment of a fund, the proceeds of which will be used for the support of aged and incapacitated physicians. The auxiliary has found this very nearly a new undertaking nationally, and entirely new locally, and a project which will be a major objective in years to come.

The student loan fund has grown steadily since its foundation, and now amounts to about \$5,000. Fifty students in the medical college of the University of Tennessee are receiving assistance from this fund, and the establishment of permanent scholarships in the medical college will be effected as the fund grows.

The health program of the American Medical Association is carried out locally by the auxiliary. The program, largely educational, is made effective through clubs, Parent-Teacher Associations and other groups, and more than seventy-five free sub-

scriptions to "Hygeia" have been placed through the efforts of the auxiliary.

Mrs. Eugene Jones, president of the Alpine Guild, spoke on behalf of the guild's approaching campaign. The auxiliary voted to cooperate.

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Davidson County—Mrs. B. F. Byrd, President.

The auxiliary held its monthly meeting in the form of a tea at the Centennial Club on January 10, with the public relations chairman in charge of the program. In order to carry out the idea expressed by the national chairman, the auxiliary invited as its guests the eighteen members of the directing group of the women's civic forum—a group which is composed of representatives of local women's clubs.

Mrs. Byrd presided over the meeting. During a brief business session it was voted to join other clubs in sending a request to the Mayor to use his influence in choosing plans for a building of classical lines for the contemplated new courthouse.

Mrs. Theodore Morford introduced as the main feature of the program Mrs. W. W. Wilkerson, Jr., who read a paper on "The Public and Its Medicine." This paper stressed the importance of periodic health examinations, urged the public to choose their doctor before they needed one, asked the various clubs to use their members who were physicians' wives on their health committees, and dwelt at length upon the fraudulent practices of patent medicines. The two brochures, "Go to Your Doctor Before He Has to Come to You" and "A Primer on the Relationship of the Physician to the Public," were distributed.

At the close of the program an elaborate tea was served. Hostesses for the meeting were: Mrs. T. G. Pollard, Mrs. Paul Morrissey, and Mrs. W. W. Wilkerson, Jr.

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#### PERSONAL ITEM

Born, on December 24, to Dr. and Mrs. William Rhea, of Paris, Tenn., a son, William Gardner, Jr.



## NEWS NOTES AND COMMENTS

The Southeastern Surgical Congress will hold its fifth annual assembly in Nashville, Tennessee, March 5, 6, and 7. The Andrew Jackson Hotel will be hotel headquarters, and the lectures and exhibits will be in the War Memorial Building.

The following doctors will occupy places on the program: Fred H. Albee, New York; W. Wayne Babcock, Philadelphia; S. O. Black, Spartanburg; Vilray P. Blair, St. Louis; Frank K. Boland, Atlanta; J. B. Brown, St. Louis; D. B. Cobb, Goldsboro, N. C.; George W. Crile, Cleveland; T. C. Davison, Atlanta; John F. Erdmann, New York; P. G. Flothow, Seattle; Seale Harris, Birmingham; M. S. Henderson, Rochester, Minn.; Arthur E. Hertzler, Halstead, Kan.; Chevalier Jackson, Philadelphia; Walter C. Jones, Miami; Dean Lewis, Baltimore; Joseph F. McCarthy, New York; C. Jeff Miller, New Orleans; A. J. Mooney, Statesboro, Ga.; John J. Moorhead, New York; Edward T. Newell, Chattanooga; Fred Rankin, Lexington, Ky.; Paul H. Ringer, Asheville; Stewart Roberts, Atlanta; George H. Semken, New York; Phil C. Schreier, Memphis; Arthur M. Shipley, Baltimore; H. E. Simon, Birmingham; A. O. Singleton, Galveston; J. R. Young, Anderson, S. C.; Waitman F. Zinn, Baltimore.

For information, write Dr. B. T. Beasley, 1019 Doctors' Building, Atlanta.

The one hundred first annual meeting of the Tennessee State Medical Association will be held in Chattanooga, April 10, 11, 12.

The Hotel Patten has been selected as convention headquarters by the local committee on arrangements.

Great preparations are being made to do everything possible to make this meeting a success. We know that the Chattanooga doctors will not overlook any bet along this line.

The committee on scientific work has written all the county secretaries asking suggestions as to essayists and subjects.

This work is progressing nicely, and we are sure that the scientific part of the program will be up to the usual high standard of the past.

Make your plans now to attend this meeting. To be sure that you will be able to enjoy the meeting to its fullest, make your hotel reservations at once.

Next month a tentative program will probably be published in the JOURNAL. Before the meeting each member will receive a copy of the program.

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Dr. P. E. Parker announces the reopening of the Elizabeth Goss Memorial Hospital, Johnson City, with offices therein. Practice limited to surgery.

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Dr. Thomas D. Moore, formerly located in offices at 1052 Madison Avenue, announces his removal to Suite 102-6 Physicians and Surgeons' Building (Baptist Hospital Annex), 899 Madison Avenue, Memphis. Practice limited to urology and urological surgery.

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We have been notified by the post office of the following changes of address: Dr. R. B. McCormick, 1460 Madison Avenue, Memphis, to 1210 Madison Avenue; Dr. C. A. Bender, Columbian Mutual Tower Building, Memphis, to 1210 Madison Avenue; Dr. J. T. Moss, Shrine Building, Memphis, to 616 Medical Arts Building; Dr. H. D. Gray, 899 Madison Avenue, Memphis, to 1001 Madison Avenue; Dr. J. M. Maury, 20 South Dunlap Street, Memphis, to 1052 Madison Avenue; Dr. J. J. McCaughn, 1460 Madison Avenue, Memphis, to 1210 Madison Avenue; Dr. J. J. Armstrong, Newell Sanitarium, Chattanooga, to 812 Medical Arts Building, Chattanooga.

## MEDICAL SOCIETIES

*Davidson County:*

January 9—"The Relation of the Practicing Physician to the Control of Tuberculosis," by Dr. A. E. Keller. Discussion opened

by Dr. Horton Casparis and Dr. Hollis E. Johnson.

January 16—"The Patient Himself—No Graphs, Pictures, or Statistics," by Dr. W. H. Witt. Discussion opened by Drs. O. N. Bryan and L. W. Edwards.

January 23—"A Brief Review of Sporotrichosis and Mycosis Fungoides, with Case Reports—An Odd Case of Aveniform Eruption," by Dr. Howard King. Discussion opened by Dr. E. E. Brown.

January 30—"Thyroidectomy in Heart Disease," by Dr. Tinsley Harrison. Discussion opened by Dr. W. R. Cate.

February 6—"Abdominal Injuries," by Dr. M. B. Davis. Discussion opened by Dr. H. H. Shoulders.

#### *Hamilton County:*

The Chattanooga and Hamilton County Medical Society has issued its annual program. The meetings are held each Thursday evening in the Medical Arts Building at 8 P.M. Visiting doctors are invited to attend all meetings.

The following papers have been read: January 11—"Diagnosis of Hand Infections," by Dr. William J. Sheridan. January 18—"Urological Problems in Children," by Dr. J. B. Killebrew; "The Effect of Diet on Teeth," by Dr. W. E. Van Order. January 25—"Diagnosis and Treatment of Asthma," by Dr. T. C. Crowell. February 1—"Needle Biopsy," by Dr. R. P. Ball; "Care of Minor Injuries," by Dr. Hiram A. Laws. February 8—"Treatment of Cystitis," by Dr. G. Madison Roberts; "Surgical Treatment of Uterine Prolapse," by Dr. E. E. Reisman. February 15—"End Results of Sinusitis," by Dr. Stewart Lawwill; "Consideration of Blood Pressure," by Dr. W. A. Reed.

The following papers will be discussed in the near future: February 22—"Medical and Dietary Treatment of Gall-Bladder Disease," by Dr. F. E. Marsh. March 1—"Cataract," by Dr. Willard Steele; "Post-operative Complications — Diagnosis and Treatment," by Dr. Cecil E. Newell. March 8—"Coronary Thrombosis," by Dr. Charles R. Thomas. March 15—"Simulation of

Acute Abdomen," by Dr. Raymond Wallace; "The Tonsil," by Dr. S. H. Long.

#### *Haywood County:*

The Haywood County Medical Society met January 15 for the election of officers and the planning of meetings for the year 1934. Eleven members were present. Plans were made to have regular meetings with a good program each month.

New officers elected were: Drs. T. R. Keeton, President; Glen T. Scott, Vice-President; Roy M. Lanier, Secretary-Treasurer.

#### *Hardin, Lawrence, Lewis, Perry, Wayne Counties:*

The January meeting was held at Waynesboro. The following papers were read: "Empyemia," by Dr. Alfred Blalock, Nashville. Discussion opened by Dr. D. L. Woods. "Increased Frequency of Urination," by Dr. E. H. Barksdale, Nashville. Discussion opened by Dr. W. E. Boyce. "The President's Address," by Dr. J. W. Danley, Lawrenceburg. "Hand Infections," by Dr. J. H. Tilley, Lawrenceburg. Discussion opened by Dr. G. N. Springer.

#### *Knox County:*

January 9—"Fractures About the Elbow Joint," by Dr. Jarell Penn. Discussion by Drs. S. R. Miller, A. G. Kern, and Robert Patterson.

January 16—"Further Observations on the Use of High Frequency Current in the Treatment of Prostatic Obstruction, with Case Reports and Clinic," by Dr. J. B. Neil. Discussion opened by Dr. Tom R. Barry.

January 23—"The Everlasting Triangle," by Dr. C. M. Capps. Dr. W. S. Nash opened the discussion.

January 30—"Sterilization," by Dr. W. S. Nash. Discussion opened by Dr. A. L. Rule.

#### *Overton, Putnam, White Counties:*

The Five County Medical Society met in Gainesboro, Thursday night, January 18, with thirty members present.



Dr. W. C. Officer, of Monterey, read a paper entitled "The Medico-Legal Aspect of Tuberculosis." Discussion opened by Dr. E. B. Clark, Sparta.

Dr. C. E. Reeves, of Gainesboro, read a paper on "Medical Ethics." Discussion opened by Dr. J. T. Moore, Algood.

Officers elected were: Dr. W. C. Officer, Monterey, President; Dr. H. T. Taylor, Cookeville, Vice-President; Dr. Alex Shipley, Cookeville, Secretary-Treasurer.

The next meeting will be held in Crossville on March 8.

#### *Shelby County:*

January 16—Case Reports: "Urethral Calculus," by Dr. W. S. Anderson; "Posterior Vaginal Hernia," by Dr. W. T. Black. Papers: "Medical Care of the Indigent," by Dr. J. C. Ayres. "Benign Tumors of the Small Intestine," by Dr. R. M. Moore and H. C. Schmeisser. Discussion opened by Drs. F. W. Fiedler and J. A. McIntosh. "A Practical Consideration of Calcium Metabolism," by Dr. W. C. Chaney. Discussion opened by Drs. T. P. Nash and A. F. Cooper.

February 6—Case Reports: "Report of a Case," by Dr. C. C. Turner. "Correction of Deformity of Nose," by Dr. J. D. Cleveland. Papers: "What Is Wrong with Our System of Dispensing Charity?" by Dr. M. W. Searight. "Treatment of Snake Bite," by Dr. Louis Leroy. Discussion opened by Drs. Casa Collier and J. A. McIntosh. "Uses of the Hammond Respirator," by Dr. C. W. Hammond, Walls, Miss.

#### *Williamson County:*

At the meeting of the Williamson County Medical Society on December 12, 1933, Dr. R. W. Billington, by special invitation, read a paper on "Treatment of Common Fracture."

The following officers for 1934 were elected: Dr. H. C. Stewart, President; Dr.

Dan German, Jr., Vice-President; and Dr. K. S. Howlett, Secretary-Treasurer.

At the meeting on January 9, 1934, Dr. T. C. Rice presented a paper on "Leg Ulcers."

#### *Wilson County:*

The Wilson County Medical Society will hold its next meeting on March 8. Dr. B. S. Rhea is scheduled to read a paper entitled "Some Complications of Pregnancy."

## OTHER MEDICAL SOCIETIES

### VANDERBILT UNIVERSITY MEDICAL SOCIETY January 5

#### 1. Report of Cases:

(a) Schüller - Christian's Disease — Dr. W. O. Vaughn.

Five-year-old white male admitted to surgical service January 25, 1933, with history of bleeding, tender gums of one year's duration. Two lesions had appeared on his head which had been incised but failed to heal. X-rays revealed destructive lesions involving skull, mandible and proximal end of left femur. Six months later he developed diabetes insipidus. Tissue removed from skull and femur was thought characteristic of Schuller-Christian's Disease. Patient being treated with X-ray and pituitrin with definite improvement in his condition.

Case discussed by Drs. Casparis and Goodpasture.

(b) Total Thyroidectomy for Congestive Heart Failure.—Dr. Harry Resnik, Jr.

L. W., a 52-year-old white mechanic, has had cardiac insufficiency for the past four years, associated with mitral stenosis and auricular fibrillation. About four months ago a total thyroidectomy was performed and for about five weeks the patient had considerable improvement. His basal metabolic rate fell from +3 per cent to -22 per cent normal, with an even proportionally greater diminution in cardiac output.

His pulse rate and blood pressure likewise decreased. Subsequently, it has been found necessary to control the development of weakness, drowsiness and mental confusion with small doses of thyroid extract.

Case discussed by Drs. Burwell, Morgan, Harrison and George Johnson.

2. Traumatic Shock and Hemorrhage.—Dr. Alfred Blalock.

It is generally believed that an increase in the concentration of the blood, a negative response to transfusion and capillary congestion and hemorrhage in the tissues are characteristic of shock due to trauma in contrast to that due to hemorrhage. Experiments were reported in which these alterations were produced by the removal of blood in such manner that the blood pressure remained at a low level for a considerable time before death occurred.

Paper discussed by Drs. Brooks and Harrison.

3. An Investigation of the Etiology of Mumps.—Drs. Claud D. Johnson and Ernest W. Goodpasture.

A non-suppurative parotitis has been produced in *Macacus rhesus* monkeys by inoculation of the parotid gland by the way of Stenson's duct with saliva of patients suffering from epidemic parotitis. The disease has been transmitted from monkey to monkey for nine generations of the virus. The causative agent of the experimental parotitis which was isolated from the saliva of mumps patients has been shown to be free of demonstrable microorganisms and to have the characteristics of a filterable cytotropic virus. The pathology of the experimental disease was described. The lesion is characterized by marked enlargement of the gland, edema of the periglandular and subcutaneous tissues over the gland, marked interstitial and parenchymal edema, focal necrosis with a large mononuclear and lymphocytic cellular infiltration of the focal areas. Cytoplasmic inclusions, the exact nature of which are yet undetermined, were also described.

Paper discussed by Drs. Casparis, Burwell, Goodpasture, and Leathers.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Divinyl Ether: Experimental and Clinical Studies. Goldschmidt, Ravdin, Lucke, Muller, Johnson, and Ruigh. The Journal A. M. A., January 6, 1934.

Divinyl ether has not an unpleasant ethereal odor and, when pure, is not as pungent or as irritating as diethyl ether. After experimenting on dogs and being satisfied it could be safely administered to human beings 461 patients of various ages were anesthetized for a wide range of operative procedures. The first stage is usually so short that consciousness is lost after a few inhalations. There is a light stage of anesthesia when sufficient relaxation can be maintained with the eyeballs oscillating. When in deep third stage anesthesia occurs this oscillation of the eyeballs ceases.

Relaxation was obtained in three and a half minutes or less. Mucus was generally present. There were two respiratory complications. Respiration was quiet. There was some fall in blood pressure, but of no serious nature. It had no effect on heart lesions. It must be given slower than diethyl ether and in less quantity. Recovery was rapid with little excitement, only in patients with pin-point pupils from preliminary morphine was recovery over five minutes. Vomiting occurred in about ten per cent of cases.

No evidence of renal irritation was found. In humans no liver damage could be demonstrated. On sixty-nine well dogs who were anesthetized for various periods thirteen cases of necrosis of the liver occurred. These lesions only occurred after two or three hours of anesthesia. Of five fasting dogs two developed necrosis of the liver after anesthesia of three hours. The authors believe that divinyl ether lies between chloroform and diethyl ether as to liver damage. Divinyl ether failed to produce liver necrosis in monkeys under any conditions imposed. In overdosage that caused respiratory paralysis in dogs the pulse remained of excellent quality and after a very short period of artificial respiration the color became good and normal respiration was resumed.

Divinyl ether should be very useful in operations where rapid induction and recovery with a minimum of after effects are desirable. Its exact position to the other general anesthetics now being used will have to await more extensive clinical experience.



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 Dr. H. B. Everett, Memphis; West Tennessee.

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 Dr. M. M. Cullom, Nashville; Middle Tennessee.  
 Dr. E. C. Ellett, Memphis; West Tennessee.

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 Dr. W. P. Wood, Knoxville (two years)  
 Dr. J. G. Gallagher, Nashville (one year)  
 Dr. J. C. Ayers, Memphis (five years)

## DERMATOLOGY

By E. E. BROWN, M.D.

Doctors Building, Nashville

Acne Rosacea. Response to Local Treatment for Demodex Folliculorum, by Samuel Ayres, Jr., M.D., and Nelson Paul Anderson, M.D., Los Angeles, California. A. M. A., March 4, 1933.

The authors admit that Demodex is more or less a normal inhabitant of the human skin, but they have found them in from moderate to large numbers in the pus and dry scales of acne rosacea whereas they are usually absent in acne vulgaris.

They report improvement or cure following the application of strong antiparasitic ointment and the daily use of soap and water. After improvement increased there was a decrease in the number of Demodex folliculorum.

Seventy-seven patients in private practice presented a clinical picture of acne rosacea or Demodex folliculorum. Fifty of these patients presented a typical picture of acne rosacea and thirteen failed to reveal Demodex folliculorum. A considerable proportion of all the cases used soap and water infrequently or not at all. It was felt that the excessive use of cold cream, powder and the substitution of cleansing cream for soap and water favor the development and multiplication of these organisms. This may partially account for the predominance of acne rosacea in women.

A small drop of pus obtained from a superficial pustule if placed on a glass slide and macerated with a drop of forty per cent potassium hydroxide or glycerin will usually show under the microscope fifteen or more organisms to the field. When such an examination shows the presence of Demodex folliculorum local treatment will usually effect a rapid improvement or cure. Antiparasitic ointments such as those used in scabies, viz., betanaphthol, 2 gm., sublimed sulphur, 4 gm., balsam of peru, 15 gm., and petrolatum, 15 gm., were employed. The ointment was usually tolerated well by those skins which were so delicate that they could not even tolerate soap and water. Excellent results were obtained in from one to three weeks. The patients were instructed to wash their faces thoroughly with soap and water each night and to apply the ointment for only three nights. There is usually a temporary increase of redness with some desquamation immediately following the application. However, this subsides in several days. It is usually necessary to repeat the treatment once or twice a week for several weeks.

There were a few recurrences in their series of cases. These were rather mild and responded promptly to further treatment.

Recently they have used Danish ointment in the same manner with equal good results and less irritation.



## INTERNAL MEDICINE

By R. B. Wood, M.D.

Knoxville

**Low Basal Metabolic Rates. A Clinical Study of States of Lowered Basal Metabolism Found in Conditions Other Than Myxedema.** J. B. Carey, M.D., and Helene Paine Brumfield, M.D. Minnesota in Medicine, June, 1933.

Based on a study of 5,000 metabolic tests the authors further confirm what might be assumed to be a typical symptom-complex. In 510 cases diagnosed as hypothyroidism a symptom-complex was found as possible: fatigue, weakness, drowsiness, goiter (28 per cent), generalized pain, constipation, overweight, nervousness (depressive or apprehensive states), menstrual disturbances, sterility and frequent miscarriages, loss of hair and dry skin.

489 cases were isolated for study with reference to dominant types for types of classification, if possible, and to determine the effect of thyroid medication. Cases under —10 per cent were included except those clinically diagnosed as myxedema. In 498 cases there were associated diagnoses as follows: infections 84, menopause 80, goiter (nontoxic) 43, obesity 42, migraine 33, anxiety neuroses 38, post-thyroidectomy (excluding myxedema) 24, secondary anemia 23, etc.

Of 113 cases treated with thyroid, 71 improved, 42 were not improved. Some improved following removal of infections without medication.

Best results were obtained in cases of menstrual disorder and least good results in cases of obesity. Of 29 cases of sterility 7 became pregnant and 11 were not followed.

In 52 cases of sterility previously reported, one-third became pregnant subsequent to thyroid medication.

In 255 married females 47.9 were found sterile while the average population shows 13 per cent sterility. Of 412 females with low B. M. R. 28.6 per cent had menstruated irregularly.

**Blood Cholesterol in Hyperthyroidism and Hypothyroidism.** Drs. Mason, Hunt and Hurxthal of Lahey Clinic.

It was found by the above authors that thyroid residue given to animals causes a decrease in blood cholesterol and in animals with decreased activity of the thyroid, the blood cholesterol increases. The same has been found true in human beings, and there is an inverse ratio between cholesterol values and the basal metabolic rate in severe cases.

In 47 cases diagnosed as hyperthyroidism the average B. M. R. was plus 57, and the average cholesterol of the blood was 130 mg. per 100 cc. blood. In 23 hypothyroids the average B. M. R. was minus (—) 130 and the average cholesterol was 321. The average blood cholesterol was taken to be around 230 mg. per 100 cc. blood.

No definite correlation between the height of the B. M. R. and cholesterol reading could be de-

termined in either hyper or hypothyroidism, but in any patient whose cholesterol reading was below 100 mg. he was clinically very ill. Furthermore it was not possible to correlate the cholesterol height with any single clinical findings such as loss of weight, duration of disease, age, etc. It was found that a high reading might be found with a basal rate that was not particularly low, so it was felt that a cholesterol reading is of more significance than a basal rate. It is concluded by these workers that hypothyroidism does not exist in patients with a low metabolic rate and the following were his conclusions:

## OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.

Doctors Building, Nashville

**Microscopic Appearances of Corneal Grafts.** J. W. T. Thomas. American Journal of Ophthalmology, January, 1934.

Corneal grafting in rabbits is divided into six main groups: (1) transplantation of the whole of the cornea with some conjunctiva, (2) central or paracentral grafts with stitches, (3) central grafts without stitches, (4) marginal grafts with stitches, (5) central grafts with parallel stitches passing over them, and (6) central grafts with "cross-stitches." Dense opacity of a corneal graft appears to be associated particularly with the following factors: (a) adhesion of the iris to the graft, (b) folding of Descemet's membrane, (c) new tissue formation behind Descemet's membrane (often vascularized), (d) vascularization of the graft from an adherent iris, (f) increased nucleation of the superficial vascularization, (g) large increase in the nuclear content of the graft, (h) the formation of irregular spaces (sometimes spindle-shaped) between the graft fibers, causing irregular refraction and diffraction of light, and (i) relatively large increase in thickness of the graft.

## PEDIATRICS

By JOHN M. LEE, M.D.

Doctors Building, Nashville

**Hodgkin's Disease in Childhood.** Clement A. Smith, M.D. The Journal of Pediatrics, January, 1934.

Twenty-three cases of Hodgkin's disease in children under fourteen years of age seen in the pediatric clinic of the Michigan University Hospital and eighty-five cases reported in the literature of the past thirty years were studied by the author, and the following were his conclusions:

"Hodgkin's disease shows an even greater tendency to attack the male sex in childhood than in other age periods. Over four-fifths (81.5 per cent) of 108 collected childhood cases were in boys. In the author's 23 cases, 91.1 per cent were in boys. There is also a marked predominance of the male sex in childhood cases of leukemia and lymphosar-

coma. The onset of Hodgkin's disease in childhood showed no significant relationship to preceding illness or to foci of infection in 23 cases studied. A familial predisposition to the disease is sometimes seen.

"Secondary invasion with tuberculosis is fairly frequently observed in children with Hodgkin's disease, and the two diseases may coexist for years in the same patient. There is a marked tendency for the tuberculin test to remain negative in the presence of Hodgkin's disease, both in children and in adults. The disease may cause tuberculin anergy. In none of 5 children with Hodgkin's disease tested with avian tuberculin was there a positive test. Results of tuberculin tests are not satisfactory evidence as to an etiologic relationship between the two diseases. The histopathology as well as the sex ratios of Hodgkin's disease in childhood are suggestive of a neoplastic rather than a granulomatous process.

"In childhood the left cervical region is considerably more frequently invaded early than the right, which may be evidence that the disease often has an unsuspected abdominal onset. Invasion of mediastinal glands is common, and often not apparent without X-ray examination. Splenic and hepatic involvement is common late in the disease, and is of bad prognostic import. Cutaneous manifestations are comparatively infrequent in childhood. Septic and recurrent relapsing (Pel-Ebstein) temperatures are not rare in children with Hodgkin's disease, and are bad prognostic signs.

"Blood studies of 20 children with Hodgkin's disease showed a progressive anemia, and a tendency to leucopenia and to an increase in monocytes. Though fulminating, rapidly fatal Hodgkin's disease is common in childhood, the average duration of 16 fatal cases was 3.45 years. Five living patients have survived an average of 4.2 years. The average duration of 41 fatal cases from the literature was 1.8 years. Cases beginning in childhood and now alive 12 and 15 years after onset have been seen in this clinic.

"The use of roentgen irradiation is recommended, though absolute proof of its ultimate benefit cannot be adduced from our cases. A program for its use is suggested."

### **SURGERY—GENERAL AND ABDOMINAL**

By ROBIN F. MASON, M.D., F.A.C.S.  
735 Medical Arts Building, Memphis

Protection of Peritoneum Against Infection. Bernhard Steinberg, M.D., Toledo, Ohio. Harry Goldblatt, M.D., Cleveland, Ohio. S. G. & O., July, 1933, page 15.

The authors here present both a method and a substance one dose of which, when injected into the peritoneal cavity of dogs, achieves protection against varied bacterial contamination within 48 hours.

Using the same dead bacteria (heat-killed B.

Coli) suspended in saline solution, in former experiments had produced upon repeated injections, given daily, protection from peritonitis, of an evanescent character. This protection was thought to be due to local peritoneal polymorphonuclear response and a rapid phagocytosis of the organisms.

The proven rapidity of the absorption of this suspension necessitated repeated injections into the cavity in order to insure protection.

It was then observed that bacteria suspended in gum-tragacanth solution were retained in the cavity instead of being absorbed.

Five groups of animals were vaccinated intraperitoneally with this substance.

Group 1. Thirty-four dogs were injected intraperitoneally with 50 cc. of 1 per cent solution of gum-tragacanth in physiological saline in which were suspended 200 million heat-killed B. Coli to the cc. From 12 to 72 hours thereafter 40 cc. 2.5 per cent gum-tragacanth solution in normal saline containing 200 million living B. Coli per cc. were injected into the peritoneal cavity of these dogs. Eighty per cent of this group, infected 48 hours after vaccination, survived. All unvaccinated controls died.

Group 2. Twenty-one dogs were "vaccinated" intraperitoneally in the usual way and infected 48 hours later with mixed living organisms 200 million to each cc. Of these twelve survived. All unvaccinated controls died.

In group 3 twenty-eight dogs were infected with the tragacanth suspension but with varying numbers of heat-killed B. Coli to the cc. Forty-eight hours later they were all infected with 40 cc. of a suspension of living B. Coli in 2.5 per cent gum-tragacanth. Those of the group vaccinated with the smallest number of dead bacilli showed smallest percentage of survivals.

Group 4 of twelve dogs was vaccinated with 100 cc. of the usual 1 per cent suspension in tragacanth. These dogs were infected 12 and 24 hours after vaccinated, six each respectively, and all survived. All controls died.

Group 5. Ten dogs were vaccinated, five with 50 cc. 1 per cent tragacanth in saline and five with 50 cc. saline containing 200 million dead organisms to the cc. Forty-eight hours later all were infected with 40 cc. living B. Coli in 2.5 per cent tragacanth solution. All animals died.

The mechanism of this protection is thought to be due to a peritoneal white cell reaction. This reaction at the end of forty-eight hours is predominantly polymorphonuclear in type. After seventy-two hours there is a constant and gradual reduction in polys.

One hundred patients from 12 to 48 hours prior to operation have been inoculated intraperitoneally with dead B. Coli 200 million to the cc. in tragacanth suspension. The operations were all of a type subject to soiling; as, appendectomy, intestinal anastomosis, etc. None had peritonitis. In one case the cavity was grossly contaminated with feces but suffered no ill consequences therefrom.



## UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
Medical Building, Knoxville

Modern Concepts of Genito-Urinary Tuberculosis. G. J. Thomas and T. J. Kinsella. *Am. J. Surg.*, January, 1934.

Treatment of tuberculous lesions of the genito-urinary tract without consideration for tuberculosis elsewhere may deprive the patient of his best chance of satisfactory recovery. Everyone should regard tuberculosis as a constitutional disease which may present local manifestations in almost every organ and tissue.

Tubercle bacilli enter the body through the respiratory and occasionally through the digestive tract. Infection may reach other organs, first through the blood stream, and secondly from the lymph stream by way of the thoracic duct.

The number of bacteria, their virulence, site of inflammation, presence or absence of local injury or other infection, trauma and individual resistance are factors which determine whether or not an active lesion occurs. Whenever gross destruction of tissue occurs, recovery becomes more difficult or impossible.

Early lesions of renal tuberculosis are symptomless, or at least not sufficient to attract attention. At this time, the urine may show a few WBC and occasionally RBC. Tubercle bacilli may appear in small numbers which are rarely found by smear, but are demonstrable by guinea pig inoculation.

The scarcity of early lesions symptoms make diagnosis difficult until the bladder is involved. If the urologists are to diagnose this condition in its incipency, they are to seek the patient rather than vice versa. Tuberculous hospitals offer the only ideal opportunity to study genito-urinary tuberculosis. Unsuspected renal tuberculosis may be masked by such conditions as stones, hydronephrosis, pyonephrosis, pyelitis, gonorrhea, cysts of kidney, and renal tumors.

Seventy-five per cent of renal infections begin in the cortical zone, 13 per cent in cortico-medullary, 11 per cent in medullary zone. Bilateral involvement is the rule rather than the exception. Gross examination of a kidney with early lesions

may exhibit no pathology. Only through serial sections can the lesions be seen. Complete healings of tiny non-destructive lesions occur in the kidney as they do in other organs, but destructive lesions never permanently heal. The ureter becomes involved late in the disease, with thickening, tortuosity, and dilation, or stricture formation. If the occlusion in the ureter is complete, bladder symptoms may cease, and not recur until drainage of the infected kidney again occurs, and then an exacerbation of symptoms ensues.

Extensive tuberculous disease of the kidneys may produce little bladder involvement, and contrariwise, a small renal lesion may be followed by extensive bladder pathology. The extent of the bladder involvement is apparently no index as to the size of the kidney lesion.

Early diagnosis entails care and perseverance, and consists of a thorough search for bacilli in smear, and guinea pig inoculation of the bladder urine. Functional tests may be misleading, as a badly diseased kidney may have a normal function. Intravenous pyelograms are rarely of value in diagnosing early lesions. Retrograde pyelograms are of great value. By pyelography, two main types are recognized, non-destructive and destructive.

Genital tuberculosis in the male is often associated with renal disease, and is usually manifested first by an epididymitis, which is nearly always associated with a vasitis, vesiculitis, and prostatitis. They believe the prostate and vesicles are the primary sites of infection.

Unilateral destructive renal tuberculosis is a surgical lesion requiring nephrectomy. The time for surgical treatment must be judiciously chosen.

Non-destructive lesions even if unilateral are not surgical cases. These individuals should be carefully watched for signs of destructive lesions as shown by repeated pyelograms. These lesions may heal. Spinal anaesthesia is advised. As much of the ureter as possible should be removed, provided it is involved. The cut end is encased in a Penrose drain, which is brought out through the skin. He uses coarse silk for skin fascia which is tied over buttons. Heliotherapy, both pre and postoperative, is of distinct value.

A complete discussion of this paper is appended.

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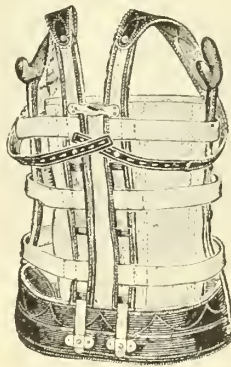
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### BIRTH AND DEATH REGISTRATION IN TENNESSEE

ROBT. H. WHITE, PH.D.

Director, Division of Vital Statistics, Nashville

**H**ISTORICAL. What has been the record of Tennessee with reference to collecting, recording, preserving, and publishing information on vital statistics? From 1796 to 1877—more than three-fourths of a century — the only provision having any relation whatsoever to vital statistics was an old North Carolina law of 1778 which remains, with slight modifications, in effect in Tennessee. This law was concerned with certain formalities and routine procedures governing marriages. It is, in a sense, a moral crime for a state, rich in traditions and historical events, to have a dismal stretch of eighty-one years wherein no systematic method was devised for collecting and preserving important facts about its most valuable asset—*its human crop*. This weary span of years, with a slight exception, is destitute of any official records dealing with the health of its citizenry, except here and there a perfunctory newspaper item recounting the total number of deaths in some epidemic-swept area.

In the State Archives at Nashville is an old, yellow, and faded document that bears mute testimony of a progressive movement that all but succeeded. In 1848 the Tennessee legislature had before it a bill "To Provide for the Registration of Births, Marriages, and Deaths throughout the State of Tennessee." This bill was passed in the Lower House of the legislature but met defeat in the Senate on February 5, 1848. If

this progressive measure had become a law, Tennessee would have been one of the first six states in the entire Union to have enacted such a law providing for a state-wide accounting of its citizenship. If a short-sighted policy had not prevailed, what a wealth of information would now be available on Tennessee's most important asset—*its own citizenry!*

Ten years later, Dr. George B. Peters, Senator from a tier of West Tennessee counties, made a vigorous but unsuccessful effort to pass a bill for registration of births and deaths. Another generation had to appear upon the scene before any favorable legislation could be had concerning vital statistics. And even the law of 1877, creating the State Board of Health, merely directed the Board "to study the vital statistics of this State, and endeavor to make intelligent and profitable use of the records of sickness and death among the people." No machinery was provided whereby valid data on vital statistics would or could be made available. This law of 1877, which was devoid of any symptoms of efficiency, was the first statute in Tennessee that related to vital statistics.

In 1881, a Vital Statistics Law was passed, but it required the vigorous support of the State Medical Society to prevail upon Governor Alvin Hawkins not to kill the bill by veto. The bill, as drawn by a committee of the State Medical Society, became



a law on April 5, 1881. Under the provisions of the law, the justices of the peace were made local registrars and were directed to submit a monthly report of the births and deaths filed with them. Soon after the law went into effect, the justices of the peace began to howl about "required work without compensation." Their howl was sufficient "to tree" legislators, for the law was repealed *in toto* twenty months after its passage. Parenthetically, it should be said that the repeal of the law wiped out the unwise provision *authorizing midwives to make out and file death certificates!*

From 1877 to 1909, with the exception of the almost stillborn statute above referred to, nothing of consequence was done in Tennessee concerning vital statistics. The law of 1909 was a clumsy and ineffective piece of legislation. In substance, it provided that the State Board of Health should furnish certain blanks to county court clerks who were to distribute same to the clerks of the Board of School Directors. Once a year these school officials were "to collect and report to the county court clerk each birth and death occurring within their respective districts during the scholastic year preceding." Two years of experience with such a law revealed what should have been apparent from the outset—no complete or accurate vital statistics records could be procured where the enumeration of births and deaths was to be made ONCE each year, but that enumeration was to be taken ONE YEAR AFTER the occurrence of each event! Although a legislative committee in 1911 recommended the modification or repeal of the 1909 act, nevertheless it remained the law until 1913 when the present Vital Statistics Law was ushered into existence.

*How Vital Statistics Are Obtained Under Present Law.* Under the Vital Statistics Law an executive is charged with the duty and responsibility of obtaining reports throughout the State with the assistance of approximately 800 local registrars residing in respective registration districts. As a rule, a civil district is designated as a registration district, although in certain cases two or more civil districts are com-

bined into one registration district for convenience. Under the law a person attending the birth of a child is required to file with the local registrar a birth certificate within ten days after the birth of the child. Likewise, an undertaker is required to file a death certificate with the local registrar within ten days after the death. On the tenth day of each month local registrars throughout the State transmit to the State Department of Health all birth and death certificates received during the preceding month. For the past few years approximately 7,000 certificates are received each month from the local registrars. These certificates are examined to ascertain whether any important information has been omitted or whether any incorrect data appear on the certificates. Thus far, it has been found necessary to send about 400 inquiries per month in an effort to obtain missing information or to clear up other items on the certificates. When the certificates are deemed to be satisfactory as to accuracy and completeness they are then arranged in order, the certificates are coded and tabulated, numbered, indexed, and then bound in a volume and filed in a fireproof vault for safe-keeping and for future reference.

The classification of vital statistics data is handled largely by means of the punch card system. Practically all of the important information on a birth or death certificate is transferred to a punch card by using code numbers. These punch cards are sorted and counted on a tabulating machine at a rate of about 250 cards per minute. This method of tabulating statistical data makes it possible to prepare detailed reports with accuracy and rapidity.

Birth registration was not seriously undertaken in Tennessee prior to 1914. At the present time there are approximately one million birth certificates on permanent file at Nashville. These birth certificates are of great value, not only to the children concerned but also to adults, in matters concerning heredity, legitimacy, and property rights. Frequently the information recorded upon birth certificates clears up a mooted point that may be of immense value to the person concerned.

Some of the more important values of birth registration are:

1. A registered birth certificate is a legal record establishing a child's citizenship, a child's parentage and legitimacy.

2. Frequently a birth certificate is essential in establishing a child's age for entering school; for a permit to work in states where certain age limits are in effect; for determining age in relation to the granting of pensions, the awarding of compensation, and military and jury duties, and for voting.

3. A birth certificate may prove to be the most important evidence regarding the bequeathing and inheriting of property.

4. Birth registration shows where the babies are and enables physicians and health workers to make proper observations and provide suitable protection as will best serve the health interests of the child and the mother.

5. Birth registration is the surest method of determining the natural increase of the population. (Excess of births over deaths).

That registration of birth and death certificates possesses a definite value is attested by the fact that 4,950 certified copies were requested and issued in Tennessee during 1932. Every child born in Tennessee has an inherent right to have its birth certificate properly made out and recorded. Sometimes, due to press of professional duties or to neglect, no birth certificate is filed. Again, a certificate is sometimes made out hurriedly and carelessly, containing glaring errors. If the practicing physicians of Tennessee had means of knowing that thou-

sands of important matters affecting certain rights and privileges of the individual are cleared up by the information which they themselves have put upon birth certificates, this knowledge would bring to these physicians genuine satisfaction. Every physician follows "his babies" with keen interest; he rejoices at their progress and development and sorrows at any misfortunes to which they are subjected. In a word, in a world of "ups and downs" unquestionably a registered birth certificate is a baby's best protection in later life. There are hundreds of babies born each year in Tennessee whose births are not reported and registered. Education, cooperation and mutual understanding are needed to help fasten the *registration habit* on the public.

On the other hand, registration of deaths is also an important matter. It is now practically a fixed policy with most insurance companies that life insurance claims are paid only upon evidence of death furnished through certified copies of death certificates. The incidence and prevalence of epidemic diseases in the State cannot be properly attacked by medical and scientific methods in the absence of information showing what diseases are causing the most deaths. Furthermore, numerous requests are made by practicing physicians for data to be used in the preparation of scientific papers. Unless the registration of deaths is fairly complete and accurate, obviously any observations or conclusions based thereon will be invalidated to some extent.

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## INTRAOCULAR HEMORRHAGE\*

ROBERT S. LEACH, M.D., Knoxville

**H**EMORRHAGE into the eye whether it be from accident, operation, general disease or the condition of the blood vessels is of considerable significance, for it may not only result in serious loss of vision, but may be of diagnostic and prognostic importance. The hemorrhage may come from the vessels of the retina, choroid or ciliary body.

Retinal hemorrhages occur most frequently around the optic nerve, next at the macula where they cause the greatest disturbance of vision, and less frequently in the periphery. We are very familiar with the retinal hemorrhages so frequently seen in arteriosclerosis. Many of these are absorbed, but occasionally they break through into the vitreous, and cause further changes. Where there are changes in the eye due to nephritis that can be seen with the ophthalmoscope, retinal hemorrhages are always present. In diabetes hemorrhages may occur with or without retinitis, and they are three times as common as retinitis. Syphilis is occasionally, but not frequently, given as the cause of hemorrhage in the eye. In the anaemias hemorrhages are not uncommon, it being unusual to find them absent in pernicious anaemia, and they are usually present in the leukemias. Contrary to expectation, hemorrhages are not frequently found, according to Foster Moore, in the eyes of hemophiliacs, but they may occur in purpura as in the cases reported by Benedict in 1930 and Love in 1931. In certain disturbances of the circulation such as hypertrophy of the heart and stenosis of the valves we find retinal hemorrhages resulting from thrombosis of the central vein and embolism of the central retinal artery.

It may be at times impossible to distinguish between a small retinal and choroidal hemorrhage, but according to Bedell

choroidal hemorrhage is not uncommon, and reports cases following accident, operation and accompanying arteriosclerosis. He who has not had the experience of an expulsive choroidal hemorrhage following operation is indeed fortunate. It is not common, for Colonel Smith said that in 8,000 cataract extractions he had seen the accident occur on the table only five or six times. Ziegler, reporting seven cases that he had personally observed, in his conclusions stated that expulsive hemorrhage of the choroid is rare, but disastrous to vision when it occurs; that the chief etiologic factors are vascular degeneration and decompression of the globe; that the globe must be excised only if the wound is infected or the hemorrhage uncontrollable. He also stated "the influence of preliminary iridectomy may be eliminated both as a causative agent and as a prophylactic measure, since the active pathogenesis can be ascribed to more potent factors."

The various diseases mentioned may cause hemorrhage into the vitreous, and we also see it in high myopia and glaucoma. Of hemorrhages occurring in the vitreous, those recurring in young adults, especially males, are perhaps the most baffling and interesting. Since Eales in 1880 published his paper on this subject the disease is often called by his name. Jackson, Finoff, Davis, and others have reported cases which they attributed to tuberculosis. Carmazza in 1928 attached great importance to the simultaneous presence of tuberculosis in eight cases, and this relationship has been confirmed by many other observers. Ellett, Redding, Finoff, and Godwin have reported cases giving focal infection as the cause. Others have attributed this disease to disturbance of the glands of internal secretion, particularly the adrenals and the thyroid. Young believes that blood calcium deficiency should be kept in mind since in one case of his calcium therapy seemed to prevent the recurrence of these hemorrhages, and im-

\*Read before the Tennessee Academy of Ophthalmology and Otolaryngology, Nashville, April 10, 1933.

proved the general condition of the patient.

Injuries and blows sometimes cause hemorrhage into the vitreous which may be followed by detachment of the retina with resulting loss of vision.

The rate of absorption of intraocular hemorrhages varies according to the amount of blood and the age of the patient. All retinal hemorrhages tend to undergo absorption, and they may disappear leaving no trace, or may leave whitish spots in the retina. It may require weeks or months for their absorption, but usually the younger the subject in whom they appear, the sooner they are absorbed. Blood in the vitreous is a foreign body. If there is a large amount it is unusual for it to be absorbed though it may do so. More frequently structural changes occur such as fluidity, floating opacities, detachment of the retina, retinitis proliferans, glaucoma, and cataract. In a case recently observed a globule of blood in the center of the vitreous, following a penetrating wound of the eye, absorbed in three weeks.

The treatment of retinal hemorrhage consists in attention to the underlying cause, rest of the eye, perhaps calcium, and iodid of potassium internally and watching for symptoms of glaucoma. The same treatment applies to choroidal hemorrhage. In recurrent hemorrhage into the vitreous, foci of infection should be removed if present, the calcium salts may be given and because of the close relationship of tuberculosis to this condition tuberculin should be administered. Dionin and massage have been tried.

Two rather unusual cases of hemorrhage into the vitreous in as far as etiology is concerned are the following:

Case I. K. B., a man 42 years old, suddenly raised his head while in a basement, striking the top of his head on a lead pipe. Almost immediately he saw a shower of black spots before the right eye. When seen a few hours later, the eye appeared normal externally, but on ophthalmoscopic examination no view of the fundus could be obtained as the vitreous was found to be filled with blood. Vision was limited to perception of light. He was put on potas-

sium iodid, was given a subconjunctival injection of normal saline and complete rest ordered. He was seen a few weeks later by Dr. D. T. Vail, Jr., of Cincinnati, and some months later by Dr. de Schweinitz who wrote in part: "Evidently at the time of the accident there must have been hemorrhage into the eye, perhaps into the sheath of the optic nerve as well, and therefore the large number of vitreous opacities which are so evident. There are long strings of white fibrin passing in various directions from the disc far forward into the vitreous, and the retina is elevated in a form of detachment which occupies an extensive area, particularly below and to the temporal side. The disc is distinctly atrophic, as far as one can see through the thickened vitreous, and the slit-lamp shows a number of opacities throughout the lens in the various layers, and particularly in the posterior cortex. I think it is quite likely that ultimately cataract will develop." This accident occurred in 1925, and the patient has been seen at frequent intervals. The tension of the eye has remained below normal and a cataract has developed. The vision of the left eye is normal, and no pathologic changes can be made out with the ophthalmoscope.

Case II. Miss C. M., age 75, was seen in January, 1932. Three weeks before she had been attacked during the night by a burglar and was struck on the head above the left eye and rendered unconscious. Since that time she had been unable to see with the left eye. The eye appeared normal, the pupil reacted slowly to light, and tension of the eye was normal. In no direction could any part of the fundus be made out, and only a dark reflex was obtained. She was given dionin, and potassium iodid internally. Six months later she could distinguish large objects, and the first of March of this year vision of the left eye was 20/50—, and could be corrected with a lens to 20/40. The vitreous is still hazy and details of the fundus cannot be clearly made out.

Occasionally large hemorrhages into the vitreous will clear surprisingly well.

Case III. Mr. W. J. M., age 62, was led into the office in August, 1928. A number of years before he had suddenly lost the



vision of the right eye, presumably through vitreous hemorrhage. For several months he had noticed spots before the left eye, and a week previous the vision of the left eye had become affected, gradually becoming worse until the day of the examination, at which time he could only distinguish between light and darkness. A diagnosis of hemorrhage into the vitreous of the left eye was made. The report of a general examination stated: "Physical examination reveals no abnormalities except (1) Lupus erythematosus, (2) Hypertension." The systolic blood pressure was 230, the diastolic, 140. The blood Wassermann was negative. He was put to bed for a time, given a restricted diet, low in salt, given potassium iodid internally and dionin 5 per cent was used in the left eye. No attempt was made to treat the right eye. Vision gradually improved and in three months it was 20/30, with his correcting lens. A month later he was brought to the office, and stated that a week before he had used a brace and bit, and had become very warm and fatigued. Vision of the left eye had fallen to 10/200. There was slow but gradual improvement in vision until a year from the first hemorrhage it was again 20/30, where it has remained. He has been seen at intervals of a few months since and has had no recurrence of vitreous hemorrhages. He has, however, had an occasional small retinal hemorrhage. There are only a few vitreous opacities, but the retinal vessels are markedly sclerosed.

Choroidal hemorrhage is probably the most serious complication that can happen during the extraction of cataract, for when it is expulsive in character it usually means total destruction of sight.

Case IV. Mrs. R. C., age 86, had a mature cataract of the left eye. Her health was fair though her blood pressure was, systolic 200, diastolic 130. A preliminary iridectomy was done, over a month previous to the extraction. There were no complications. Before the extraction tension of the eye was normal to fingers, but it was not taken with a tonometer. Cocaine anaesthesia was used, and there were no complications at the time of operation. Three

hours later the patient began to complain of severe pain and blood was seen oozing beneath the dressing. The dressing which was saturated was removed. Blood was coming from the eye and a large clot protruding through the gaping corneal wound. A bandage was applied and to relieve pain, the eyeball was removed under local anaesthesia three days later. Six months later the patient died from intracranial hemorrhage.

Case V. Miss L. R., age 79, had had a preliminary iridectomy done on each eye at the same time and fortunately there had been no complications. These operations were performed a year before in a distant city. She had a thorough physical examination done previous to the extraction. She was found to be in good physical condition except that her systolic blood pressure was 180. At the time of operation novocain was injected into the temporal muscle and cocaine anaesthesia, without adrenalin, was used. Immediately following the extraction the patient complained of agonizing pain and vitreous poured through the wound, followed by blood. Two days later the eye, which was entirely filled with blood clot, was removed under general anaesthesia.

### CONCLUSIONS

Retinal hemorrhages are common, and they may be absorbed, causing no permanent damage to vision, or their effect may be permanent, depending on the size and location. Blows upon the head may sometimes cause extensive hemorrhage into the vitreous. Expulsive choroidal hemorrhage following operation is always destructive to sight, and such eyes should be removed where the bleeding cannot be controlled and to save the patient a long period of suffering. It is my belief that many of these hemorrhages are due to the atheromatous condition of the blood vessels in elderly patients, and that preliminary iridectomy has no effect in preventing these disastrous hemorrhages.

### DISCUSSION

DR. KATE SAVAGE ZERFOSS (Nashville): With the exception of hemorrhages caused by trauma, one should carefully correlate the results

of a general physical examination with the intraocular findings. When a hemorrhage has taken place attention should be directed to circulatory, toxic, or metabolic conditions or one of the blood dyscrasias. These can be determined only by obtaining the history and general physical examination coupled with complete laboratory reports. An omission of a generalized investigation may deprive a patient of the fundamental benefits of a diagnosis and treatment of the major condition of which the eye disease is only one manifestation. An entirely negative examination is not to be discredited and is of importance especially in such cases of retinal and choroidal hemorrhage in young adults, the etiology of which was formerly thought to be of tuberculous origin.

It has been suggested by Friedenwald that there is an anatomical condition which serves as a predisposing factor for hemorrhage in the retina. This concerns the vessels at the site of the crossing of the vein by the artery where there is normally a fusion of the fibrous coats of the one with the other. In arteriosclerosis there is an extension of the involvement of a portion of the vessel sheath of the vein continuous with the sclerosis of the artery causing a partial obstruction of the vein. This type of venous sclerosis is of frequent occurrence in the retina and accounts for the dilatation of the vessels. In thrombosis of the veins the portion distal to the point of occlusion has increased pressure and rupture occurs frequently. The contributory factor often being a sudden change in intraocular pressure or blood pressure. Moderate sclerosis of the retinal and choroidal vessels associated with hypertension may be existent for indefinite periods without causing an appreciable variation of visual acuity or retinal function. However, if later an intraocular operation becomes necessary the presence of vascular disease makes the prognosis more uncertain. Such a condition is an indication for even greater care than usual in avoiding sudden diminution of the intraocular pressure in making the corneal incisions and in fixation of the eyeball—avoiding indentation or pressure of the sclera.

In the January and February, 1932, report of the Seth Hilarand Hospital in India, made by Bothman of 1,000 cases of cataract extractions by various methods, there were ten expulsive choroidal hemorrhages. (The Smith operation was done in 566 cases). Five of these expulsive choroidal hemorrhages were in a group of 23 cases who had glaucoma as well as cataract. These statistics confirm one of the well-known risks of intraocular operation on glaucoma cases.

DR. J. B. STANFORD (Memphis): The subject of intraocular hemorrhage is so large that books may be written on it, so it must necessarily be sketchily considered in a brief essay. Dr. Leach might add the optic nerve and the iris to his sources of hemorrhage.

I disagree with the essayist in his statement that "where there are changes in the eye due to

nephritis that can be seen with the ophthalmoscope, retinal hemorrhages are always present." If we are to believe that vascular hypertension may be due to nephritis, then ophthalmoscopic evidences of such disease are almost always present before retinal hemorrhages appear.

My experience with pernicious anemia is limited to one case and in it no retinal hemorrhages were present even after cataract extraction, with its sudden reduction of tension.

It appears to me that differentiation between retinal and choroidal hemorrhages is not so difficult as the recognition of a choroidal hemorrhage at all, particularly if the hemorrhage be small and in a highly pigmented fundus. Expulsive choroidal hemorrhage after a cataract extraction is a sad experience I have had twice, and total loss of the eye in both cases was the result. So far as I know, there is no method by which such a catastrophe can be predicted, nothing which may be done to prevent it, and nothing to help matters after the situation has developed.

I believe it is the opinion of most capable men that spontaneous hemorrhages into the vitreous in young subjects is usually tubercular.

In cases such as the first two reported by Dr. Leach, I believe intraocular hemorrhages are more apt to occur in the presence of vascular hypertension.

Dr. Leach has not mentioned the hyphemia which occurs after contused wounds to the globe. These hemorrhages usually absorb promptly, but the blood may cause a secondary glaucoma with destruction to vision. On several occasions after the absorption of such hemorrhages I have observed secondary hemorrhages four or five days after the accident. For some years I have followed the practice of instilling eserine instead of atropine in these cases and believe that the results are more satisfactory.

DR. HERSCHEL EZELL (Nashville): Hemorrhage into the various tissues of the visual apparatus usually manifests itself by interference with vision but of greater importance is the evaluation of this condition with regard to the general well-being of the patient as it may be only a symptom of a more serious general disease.

Although intraocular hemorrhage may arise from the uvea or retina I think that the essayist will agree with me that hemorrhage from the retina constitutes the most important group of intraocular hemorrhages. Such bleedings are frequent and occur in all sorts of sizes and shapes. The hemorrhagic areas are dark red in color in contrast with the bright red of the fundus and are most frequently located in the neighborhood of the larger vascular trunks. They may occur at any part of the fundus; or in any of the retinal layers, are most frequently near the optic nerve, next at the macula and least often in the periphery. They may be within the retina or in front or behind it and may extend from one retinal layer into another.



It is important to determine for prognostic reasons the position of the hemorrhage which may be done by noting its relation to the retinal vessels, its shape and the presence or absence of pigment. If the retinal vessels are completely hidden by the hemorrhage it is preretinal, if the vessels are partly or wholly covered in spots the lesion is in the superficial layers and if the vessels pass over the hemorrhage the latter is in the deep retinal layers or choroid. The presence of pigmentation shows that the hemorrhage is in part at least in the deep retinal layers. Hemorrhages in the deep retinal layers and post retinal are of rounded or irregular shape, if in the fiber layer they are striate or flame shape and if in the region of the macula large disk-shaped extravasations sometimes occur. Preretinal hemorrhages may become absorbed and cause no damage to the retina and if they are not absorbed large membranes may form which is a most damaging sequel.

Intraocular hemorrhage is most common in the elderly but occurs occasionally in young individuals about the age of puberty. The former is accounted for because old people are most often affected with heart lesions, vascular diseases and changes in the composition of the blood. High myopia may give rise to retinal hemorrhage which is usually located in the region of the macula. Injury about the head is a fairly frequent cause of intraocular hemorrhage.

In recent years focal infection has been held responsible for a great many cases of recurrent hemorrhages into the retina and vitreous. Lewis, Ellett, Young, McCrea, Finoff and others have reported cases in which focal infection has been given as the cause. Zentmayer believes that the adrenals independently or in association with tuberculosis are responsible for the hemorrhage. Jendelize has reported three cases in which hyperthyroidism was present. Many cases have been quite recently reported due to tuberculosis by Davis, Finoff, Hanke, Braun and others. Young thinks that deficient blood calcium may explain the recurring hemorrhages.

All intraocular hemorrhages tend to undergo absorption and some clear up remarkably well. I had a patient a few months ago with preretinal hemorrhage following an injury, with vision of light perception only that cleared up within three or four weeks leaving nearly normal vision. Cases due to injury probably clear up better than from

other causes. After repeated hemorrhages the vision is usually lost from detachment of the retina or proliferating retinitis and unless further hemorrhages can be prevented most cases will result in blindness.

The treatment of this condition should be directed primarily to the removal of the cause. Probably the best results have been reported in those cases due to focal infection from the teeth, tonsils, and sinuses and some very gratifying results have been recently reported from this category. Tuberculin has been used by Finoff, Hanke, and others with variable results. Thyroid extract is thought by Zentmayer to be of real value. Pituitary extract is recommended by Jendelize. Benedict advocates the use of salvarsan for its non-specific action and states that tuberculous lesions about the eyes even unassociated with syphilis respond better to salvarsan than to tuberculin. Deficient blood calcium was present in two cases reported by Young in 1929 with no attacks of hemorrhages in one case since the beginning of the administration of calcium two years previously. He recommends that the blood calcium should be studied in all cases of this disease with the hope of obtaining more efficient treatment. Kobey recommends arsenic, potassium iodide, tuberculin and subconjunctival injections of 2 to 4 per cent solution of sodium chloride. Grunert recommends paracentesis and subconjunctival injections of asterol, dionin and sodium chloride to be used only in old cases.

It is altogether possible therefore, that intraocular hemorrhage is the result of two or more pathological processes existing conjointly. The multiplicity of causes of this disease calls for a thorough physical as well as an ophthalmoscopic examination. The treatment of the condition although of doubtful value under any and all circumstances will be more effective if the etiology has been determined.

DR. R. H. NEWMAN (Knoxville): In all hemorrhages in the eye, other than those of traumatic origin, the blood calcium should be made and if the finding is below ten the parathyroid hormone and calcium should be given. At any time when parathyroid is given, this should be supplemented with calcium as the parathyroid liberates the calcium in the osseous system and some of the calcium salts should be given either intravenously or by mouth to supply the deficiency.

**Plan to Attend the 101st Annual Meeting  
TENNESSEE STATE MEDICAL ASSOCIATION  
April 10, 11, 12  
Headquarters—HOTEL PATTEN—Chattanooga**

## INSTALLATION ADDRESS\*

### OF THE PRESIDENT OF THE MEMPHIS AND SHELBY COUNTY MEDICAL SOCIETY

W. L. WILLIAMSON, M.D., Memphis

THE NEW DEAL is in the air. Throughout our civilization this is a formative period of time. This year

is to prove an epochal period in the history of medicine. For two thousand years the medical profession has, largely, abided by its code of ethics of fair practice. It has unshrinkingly assumed the obligation of caring for the sick. We believe that it is generally agreed that, in every field of action where medical services have been needed, the profession has met the demands adequately. We must and shall continue to meet these demands, unshackled by commercial marketing of our services, or political domination of our activities.

We are 100 per cent back of the President in his efforts for National Recovery. We, too, are suffering from the depression and will probably be the last group to recover. The numerous codes worked out by various industries have rightly had their interest in view. They have endeavored to fit into the larger plan and at the same time guard their own restoration to normal.

Who shall pilot our ship through this stormy sea?

For the information of those who may not have felt interested enough to investigate some recent developments it might be well to mention a few facts.

Last April a few hirelings of the State Health Department defeated legislation supported by the entire Tennessee State Medical Association. We do not want to abolish the Health Department. We want to improve this work and have them function in their proper fields. This department is a product of the medical profession and must be controlled by the profession.

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\*Delivered on the night of January 2, 1934. By motion made from the floor and unanimously carried the Secretary was instructed to mail each member of the Society a copy.

## TRANSIENT BUREAU ASSOCIATION

About two months ago the president and secretary of this society were approached by a representative from the Transient Bureau Association asking for advice and guidance. These officers called in our Legislative Committee. These five members met several times with the women who are the heads of this organization. There are about one thousand transient men coming to this Bureau each week from every part of the United States and from every walk of life. The women wanted to know every detail as to how the work should be done, but they did not want to know how much the services of a competent physician should be to take care of these wanderers. That had been fixed by some one at \$125.00 per month. If this man worked 20 hours a day he could not do all his work, while some of these transients, if and when employed for eight hours a day, will receive approximately \$135.00 per month.

## THE FEDERAL RELIEF ADMINISTRATION

This organization is to care for the indigent sick, and recently has been taken over by the Federal Government. It is presumably for the duration of the emergency only. Again some one has arranged for the compensation of the doctor to care for these people. The fees suggested for these services were in part: 50 cents for an office call; \$1.00 for a house visit within two miles of the office; "\$12.00 for an obstetrical case, including prenatal care, delivery and bedside calls on the first, third and fifth day after delivery and as frequently as the patient's condition requires up to and including the fourteenth day. At the end of six weeks the mother may go to the doctor's office for a final post-partum examination without extra charge. Post-partum



visits shall include examination and treatment of the infant as needed and the administration of prophylaxis (to prevent blindness), as required by law, shall be made without extra charge." All for your \$12.00. If we should accept any part of this work it is evident that such fees should receive no publicity. All these burdens will be hard to shake off after the emergency is over.

#### FEDERAL MEDICAL RELIEF AND EMPLOYEES' COMPENSATION

I would like to quote an announcement made last week from the Journal of the A.M.A. under Federal Medical Relief and Employees' Compensation. "Four million persons have been placed within the last few weeks under the coverage of the Federal Employees' Compensation Act. For every injury and occupational disease sustained in the performance of duty, all the four million are entitled to medical and hospital services at government expense. For disability or death, resulting from some such injuries and diseases, they or their surviving dependents are entitled to compensation. This army of employees has been hired and put to work, many of them in strange fields, without medical examination or approval. The possibilities of the situation, present and future, require the serious consideration of the medical profession. Under the cover of emergency activities the government is enabled to undertake actions that would not be assumed in less feverish times without extended hearings by all the elements of the population concerned. Physicians view with alarm this gradual transmutation of medical practice into a function of government bureaucracy. History indicates that measures introduced in an emergency tend to be perpetuated by the bureaucrats developed to make them effective during the emergency. The medical profession requires some assurance that these new invasions of the medical practice by the government are to be truly emergency measures in the strictest sense of the term."

Another paragraph under the Federal Medical Relief and Employees' Compensation says:

"Wage rates are to vary. No maximum rates are to be fixed. The minimum rate for the unskilled labor in the South is 40 cents an hour and in the North 50 cents an hour. In the South, skilled labor is to receive not less than \$1.00 an hour, and in the North not less than \$1.20. Rates of pay must in any event be such as will, with a thirty hour week, enable an employee to live in decency and comfort. These wages, it is assumed, will enable every employee to pay for such medical services as may be needed by him and those dependent on him. If, however, an employee because of the stress of circumstances is unable to do so, he may apply to the state or local emergency administration for aid including medical services."

"An employee may refuse the medical or hospital treatment proffered by the government, but if he does so the government will not pay for the medical or hospital services that he provides for himself. An employee treated by his private physician or in a private hospital selected by him must report from time to time to a United States medical officer, or to an officially designated physician, for examination to determine whether or not his disability continues."

Now these are conditions with which we are confronted, brought about by State and Federal laws. We must present a solid front so that we can terminate any abuses when the emergency is ended.

What about our own house, here in Shelby County? Is it in order? We have well equipped hospitals where our patients should have proper care. Those patients able to pay should be charged a reasonable rate. They should not expect nor receive more. It is an injustice to the patient, hospital and staff to allow dead beats to reap the benefit of this service without pay. The hospitals have not used proper diligence in avoiding this abuse. There seems to be more of a tendency than ever for people to feel that they are entitled to all that they can get for nothing, instead of wanting to pay for value received. We do not refer to those unable to pay. They are willingly given all our services. The class of patients

who get less and cause the profession more trouble is the group who consider all doctors as equal. He does not have the preference for an individual doctor which makes him feel confident that no one else could render equal service. He goes into the open market to buy what he wants from the lowest bidder. Shopping from doctor to doctor he gets encouragement by receiving lower bids. He accepts the lowest bid or enters the hospital at a ridiculously low rate. Here the case or operation is handled by the house or staff man without fee. The patient has been pauperized. The hospital, practicing medicine, has been underpaid for its legitimate service. An ethical doctor's services has been cheapened and a doctor in private practice who is entitled to his legitimate business has been deprived of his earnings. Is this a practice which should exist in this society? It is the unanimous opinion of the medical profession in every country, based on centuries of experience, that the commercial marketing of medical services will decrease the quality of that service. Such methods are not necessary. There is work here for all at reasonable charges for services rendered. There is no one in Shelby County to care for the sick except the doctors of Shelby County. It is hardly probable that this group could be replaced in a short time by others. Let's devise means to separate the sheep from the goats. Or, devise means to get rid of the goats.

If properly organized we can attend to the medical needs of this community, and accomplish any other fair and reasonable ends which may be necessary.

How shall we do this?

Re-establish our Journal so that we may keep our members informed on what is being done and what is expected of them. I think for the duration of the emergency we should reverse the order of our meetings. We can well afford to mark time for a while on our scientific program and step lively on the economic side. Each of our meetings should have one or more men on the program who would keep the membership well informed on the rapid changes of affairs affecting our interest. You have selected a capable house of delegates representing 10 per cent of our membership. With the whole society organized in groups of ten, it should be fairly easy to get concerted action on any matter of importance. We shall make an earnest effort to get the better men of this society interested in the common good of all, and in the words of our President "together we cannot fail."

In closing the one thought I would advance and insist upon is that, in the new deal, the welfare of our people from the standpoint of health must remain in the hands of the medical profession, and if it does remain in our hands, we must adequately deal with each situation as it develops.

### **HOTEL PATTEN**

**is the Headquarters of the 101st Annual Meeting**

**TENNESSEE STATE MEDICAL ASSOCIATION**

**April 10, 11, 12.**

**Chattanooga.**



## HYPOTHYROIDISM\*

FREDERICK E. MARSH, M.D., Chattanooga

THERE is a group of patients whom we have wrongly classed as neurasthenics, sufferers from auto-intoxication, victims of constitutional inferiority, et cetera. These patients often run the gauntlet of physicians until some one makes a metabolic rate determination and finds they are deficient in thyroid secretion. The administration of thyroid extract in sufficient doses often gives these patients relief from their numerous symptoms and restores them to their normal and natural place in society.

The chief function of the thyroid gland is to provide a means for maintaining a higher rate of metabolism than would exist without it. According to Warfield, the thyroid gland controls and stimulates growth in general; it controls and stimulates the functional processes of the body tissues; it neutralizes the toxic substances produced in the normal metabolism of the tissues; and it assists in the defensive action of the organism against bacterial toxins. The epithelial cells of the thyroid are unique in their ability to abstract iodine in any form from the blood. This iodine which the thyroid absorbs is returned to the circulation in the form of a relatively simple iodinated amino acid called thyroxin in combination with a polypeptide. This substance excites about 40 per cent of the total heat production of the body.

In 1856, Schiff showed that extirpation of the thyroid and the parathyroid glands in dogs is followed by death of the animals in one to four weeks. The dogs exhibited certain characteristic symptoms such as muscular tremors which may pass into convulsions, cachexia, emaciation and a condition of apathy. It soon became known that atrophy of the thyroid in the young causes a condition of arrested growth and deficient mental development known as cretinism and

that in the adult atrophy of the gland gives rise to the peculiar disease called myxedema. This disease is characterized by distressing mental deterioration, an edematous condition of the skin, loss of hair, etc. In more recent years, it has been observed there is often a deficiency of thyroid secretion in the body without a total lack of the secretion giving rise to numerous and varied symptoms. There are many grades of thyroid deficiency and the slighter grades are often difficult to recognize.

**Etiology.** The condition may follow complete or partial removal of the gland by operation. It may follow an attack of thyroiditis. Frequent pregnancies, infections of a mild degree, psychic states, anxiety and mental strain are said to be contributory factors. Hypothyroidism often follows the menopause. The dying ovaries are the impetus which deranges the balance of internal secretion producing thyroid disturbances and often a deficiency of secretion.

The symptoms of hypothyroidism are numerous. The signs are associated with nearly every physiological and anatomical system of the body. Because of insufficiency of thyroid secretion there is a faulty nutrition of all the cells of the body and a deranged metabolism resulting in the infiltration of the various tissues with the products of faulty catabolism.

The chief symptom in the hypothyroid state is the lack of endurance. These patients are unable to stand any sort of strain, physical or mental. Vague digestive disturbances are often noted. Constipation is frequent especially in women around the age of forty years. Headache is a common symptom and may be confused with migraine. Insufficiency of thyroid secretion may reveal itself through malfunctioning of the brain cells. Thought becomes very slow and bodily movements are retarded. Ziegler has reported a series of cases of hypo-

\*Read before the Chattanooga and Hamilton County Medical Society, Chattanooga, May 8, 1933.

thyroidism who showed marked psychotic symptoms.

There is a definite relationship between hypothyroidism and arthritis, according to Hall and Monroe. In their series of 150 cases of hypertrophic arthritis, 84 per cent had a basal metabolic rate of minus 10 per cent or lower. Thyroid gland therapy was of permanent beneficial effect in 49.1 per cent of the 116 cases of this group in which it was deemed wise to use. In the atrophic type of chronic arthritis 150 cases were also studied by Hall and Monroe and the basal metabolic rate was below minus 10 per cent in 53 per cent of the cases. They concluded that thyroid gland deficiency appears to be a contributory factor in the causation of arthritis in certain patients. Its correction when present often improves the general well-being of the patient, aids in the relief of the joint pain and disability and helps to lay a foundation for the permanent control of the arthritis through better joint nutrition.

Contrary to common belief, obesity is relatively rare in patients with hypothyroidism and actual underweight is not frequently found in the mild hypothyroid state. Another important fact is that incipient hypothyroidism is more frequently found near the menopause and, as stated before, has some relation to the activity of the ovaries.

A constant fact as noted by Hoge is a tendency in the hypothyroid state to contract infections and an inability to throw them off. This is especially true in nose and throat infections.

In the majority of cases with hypothyroidism we find dry dead-like hair, dry skin and cold extremities. These patients rarely perspire. They never get warm except by artificial means. Nervousness is usually present. Headache, constipation, poor appetite and subnormal temperature are symptoms usually found. There is nearly always one characteristic feature in the history of these patients and that is a sub-

efficiency of the bodily machine. There is a background of inefficiency generally physical and in cases of long duration mental as well.

I wish to review a series of 118 cases in whom the basal metabolic rate was below minus 10 per cent. The ages of the patients ranged from 14 years to 66 years. There were 99 females and 19 males. Between the years of 14 and 20 there were six patients; between 21 and 30 years there were 21 patients; between 31 and 40 years there were 39 patients; between 41 and 50 years there were 34 patients; between 51 and 60 years there were 14 patients; and between 61 and 70 years there were 4 patients.

The clinical diseases or conditions associated with the lowered metabolic rate were as follows: 3 patients who had had partial removal of the thyroid; 47 patients who were overweight; 4 patients who had hysterectomy; 12 patients with definite ovarian deficiency; 6 patients with gall bladder disease; 2 patients with pituitary deficiency.

As to the major signs and symptoms accompanying the lowered basal metabolic rate there were 99 patients whose main symptom was weakness; 75 patients who had very dry skin; 54 patients who had dry or thin hair; 68 patients with hypotension; 91 patients whose chief symptom was nervousness; 68 patients who had secondary anemia; 74 patients who were markedly constipated; 23 patients with localized edema of the lowered extremities; 30 patients who had recurring attacks of headache.

#### SUMMARY

(1) There are many grades of hypothyroidism varying from the very mild to the severe or state of myxedema.

(2) It should be suspected in all patients who manifest a definite subefficiency of the body or mind.

(3) It is not limited to the obese but frequently occurs in the undernourished.



## DIET, VITAMINS AND TEETH\*

ARTHUR G. JACOBS, M.D., Memphis

**N**UTRITION exerts a powerful influence on the development of the teeth and on their decay. In recent years a great many experiments have been performed on animals and human beings in which it has been conclusively demonstrated that dental caries can be produced, prevented and cured. Such results have been achieved through diet, vitamins and endocrines, and it is possible to control caries in animals at will.

The teeth represent a part of the skeleton which is exposed to external influence and therefore may be classed as exoskeletal. At the same time teeth are directly under the influence of the blood and lymph, the nervous system and the endocrine glands. In this respect they are distinctly endoskeletal. We are therefore justified in considering the condition of the teeth as a manifestation of the condition of other parts of the skeleton.

There are two processes in the destructive effect of nutrition as exerted upon the teeth. The first is the non-constructive process in which the dietary deficiencies fail to produce sound teeth, and second the destructive process wherein the food in intimate contact with the teeth decomposes and produces substances that destroy them. Considerable confusion exists with regard to these two aspects, and many attempts have been made to throw light upon this subject.

Histology teaches us that the dental pulp contains lymphatics which penetrate into the dentine. Lymphatic channels are present in the dentine and even the enamel contains such passages. Lymph reaching the pulp passes through these channels and nourishes the tooth, then passing out, in all probability, from the tooth into the saliva.

Lymph leaves the blood through the capillaries and consists of a portion of the fluid element of the blood with organic and

inorganic matter in solution. The composition of the lymph then depends on the diet of the individual. If the lymph reaching the tooth contains all those elements necessary to proper growth, structure and development of the tooth, only a perfect tooth can result, and in as much as diet is the chief factor in this determination proper food plays a powerful role in the building of sound teeth with sound functions. While it is true that diet plays a powerful role in the drama, it is not the entire role, as other factors play important parts too. Even though proper food elements in proper proportion are supplied to the bones and teeth, they are not necessarily utilized by those structures. The conditions which promote utilization of proper materials brought to body structures are not very well understood. Some of these factors are known to us. We know that deficient vitamins, deficient endocrines and toxic conditions interfere with the metabolism of these structures. To these may also safely be added heredity.

In order to secure proper tooth structure we have to begin our preventive care long before birth, as calcification of the temporary teeth begins in the fourth month of fetal life. The mother's blood feeds the fetus at this early age so that the composition of the embryo's blood is dependent upon the diet of the mother. The demands of the fetus are very powerful so that the bones and teeth of the embryo remove much calcium from the mother's blood. If there is not sufficient thereof present in her blood, such material is removed from the bones and teeth of the pregnant woman, producing decay of her teeth. Deficiency in the mother's diet influences the deciduous teeth, calcification of the permanent teeth beginning after birth. The mother's diet should contain foods affording sufficient calcium. Such foods are milk, cheese, and egg yolk. Every pregnant woman should get a quart

\*Read before the Memphis and Shelby County Medical Society, Memphis, November 7, 1933.

of milk a day in order to promote proper growth of the deciduous teeth as well as that of the permanent teeth. Breast milk affords us the best means of doing this, provided of course that the mother is getting the necessary diet, is physically fit, and has enough milk. If breast milk fails, it is possible to feed the baby artificially so that it gets all necessary elements. Roughly speaking, one and a half ounces of cow's milk to a pound of body weight in 24 hours fills this requirement. Infants on too concentrated carbohydrate diets, such as condensed milk and malted milk, are prone to develop bone and dental defects. Such teeth are delayed and irregular in eruption, their structure lacks density, and they decay readily. A generally undernourished baby may have a narrow palatal arch and pointed mandible, causing crowding of the teeth.

Starchy foods and sugars are believed to favor dental caries. Certain organisms in the mouth, particularly *bacillus acidophilus*, have the power to decompose carbohydrates directly, thus producing lactic and other acids whose continuous action on calcified tissue is destructive. Among many other observers, Boyd and Drain claim that dietary conditions are far more important in producing or preventing caries than any local condition. Observation has proven that children fed on improper diet frequently develop caries, and it is also generally demonstrated that this disease process can be arrested by putting them on the proper egg, milk, and vegetable combinations. Briefly stated, the following diet meets with very general support. A child or expectant mother needs one and a half pints of milk a day. A child needs one egg, and an adult two eggs. It is a good idea to give a six-months-old baby one-half of the yolk of one egg. Both child and adult should have two green vegetables each day; one cooked, one raw. Both child and adult should receive an orange; and a baby, orange juice. Roughage such as toast, zwieback, Graham bread and cereals are necessary. An infant six months old should receive spinach, carrots, and cereals in addition to the milk and orange juice.

**Vitamins and the Teeth:** The chief

vitamins concerned in proper development of the teeth are vitamins A, C, and D, although there is much evidence that vitamin B also has a part. Vitamin A is of value in promoting growth and affording resistance to infection, vitamin C is the antiscorbutic, and vitamin D the antirachitic. The human body cannot create these vitamins, nor has the body power to store them for any length of time, so that they must be constantly taken in, in the form of food. For these reasons the mother's diet should be so arranged that she receives all necessary vitamins regularly in order that she be in position to supply her unborn child with blood containing these substances, and later furnish to her infant milk of sufficient vitamin content. Marshall has shown that if vitamin A alone is deficient in the mother's diet, in the presence of other adequate factors, the permanent teeth are affected and are more susceptible to caries. Deficiency of vitamin A alone produces rachitic changes manifested partly in hypoplasia of the temporary teeth. If vitamin C is deficient in the mother's diet changes are manifested in the dental pulp and odontoblastic layer. Vitamins A and D are found abundantly in milk and egg yolk, and these foods should be supplied freely. However, in order to supply adequate amounts of A and D, it is deemed essential to give in addition cod-liver oil. Vitamin D alone can be supplied in viosterol, five to 10 drops daily, but viosterol contains no vitamin A. The antiscorbutic vitamin C is supplied generally in orange juice and tomatoes. After birth, proper growth of both the deciduous and permanent teeth is furthered through the breast milk, provided of course that the mother has a sufficiency thereof, and that she is physically fit, and eating the proper diet. If the baby's diet lacks sufficient vitamin D and insufficient calcium is deposited, rickets develops and there is delayed eruption and development of the deciduous teeth. Such teeth are soft and tend to decay readily, lose their alveolar crest and suffer from root-exposure. The effect of rickets on the jaws is more important even than on the teeth. Deficiency of vitamin A retards growth of the jaws and produces a quality of bone lacking in



firmness and density. Accompanying these bony defects is diminished secretion from the mucous membrane of the mouth with enhanced susceptibility to infection. Deficiency of vitamin C produces scurvy with hemorrhage from the bones and mouth, the bone is porous and bleeds easily, the dental pulp is affected, dentine is absorbed and the gums are spongy.

While osseous structures disclose a deficiency in the element calcium as pathological of rachitis and its accompanying dental caries, experiments on animals, particularly rats, show that lack of phosphorus or low phosphorus in the diet is one of the chief etiological factors. Second, lack of or insufficient vitamin D is another important etiological factor. The omission of either of these can and does cause dental caries, and its introduction will cure caries and prevent it.

The type of food influences the gums directly and may either stimulate normal activity or bring about disease. It has ever been a perplexing problem to explain why barbarous, uncivilized people have such clean, white teeth. Esquimaux on the Pribilof Islands living on an American diet, generous use of sweetened condensed milk and bread, have rampant caries; no immune cases. While Esquimaux north of the Arctic Circle, where they do not come in contact with American foods, but live chiefly on fish, meat, and berries, no sugar or carbohydrates, have no caries.

Among the present Hawaiian population, especially oriental children with a diet of rice, sugar, soda pop, few vegetables, very few citrous fruits, and practically no milk, the ravages of dental caries are terrible. While in the ancient Hawaiian population, living chiefly on a Polynesian diet of fish, native fruits, and vegetables, very little starch, acid tafo, in all the skulls found were remarkably perfect teeth, both as to structure and functional relations.

It is difficult to understand why the African Negro living far from enlightenment, who has never seen a toothbrush, whose mouth has never had regular systematic care, and to whom the dental profession is not even a fantastic dream, should have ex-

cellent teeth. While this is true of the African tribes, it is far from the facts concerning the Negroes living in civilized communities.

Investigations carried on here by public health authorities disclose the fact that the teeth of Negro children here are in far worse condition than those of the whites. Uncivilized tribes eat food that is tough, coarse, fibrous, and often raw, a class of food that requires vigorous chewing. Such practice secures good muscular action, promotes the circulation, massages the gums and cleanses the teeth. McCollum examined 200 skulls found in the old cliff dwellings of the Southwest, and did not find a single carious tooth among them. Steffanson examined 96 skulls in Iceland, of people of early days, and found no decay among their teeth. Hard bread, toast, fibrous vegetables, tough meat, and tough fruit should therefore be added to diets.

Every child should be taught to masticate his food thoroughly and to eat slowly. While it is true that mouth organisms are capable of attacking the teeth under certain conditions, we are convinced nevertheless that they could not attack a sound tooth. The role played by bacteria of the mouth in caries is undoubtedly purely secondary. The proper cleansing of the teeth and the proper care of the mouth is always of great value in oral hygiene, and properly used will tend to delay decay of teeth even where improper feeding and other factors are at work.

Endocrines and the Teeth. According to Engelbach, there are three basic endocrine principles that concern the dental profession vitally. First: Improper thyroid function causes retarded development of all osseous centers, including the toothbuds. Second: The hormone from the anterior pituitary body is concerned with all growth. A decreased supply of this hormone will produce diminished development including the teeth. Third: Gonads are important factors in calcification of the teeth and bones. Overfunction produces hypercalcification, and deficient secretion, lessened calcification. Many cases of malocclusion and dental caries could be prevented if it could be determined that as a result of

endocrine deficiency the child was developing abnormally.

I do not wish to leave this subject without bringing to your attention a dental condition in children which has ever been a source of dissatisfaction to the pediatrician; I refer to the carious deciduous tooth. I am sure that we realize that extraction of a deciduous tooth might result in irregularity in the eruption of a permanent tooth with resulting deformity. However, we fear that a decayed tooth might become a focus of infection endangering life itself, or producing pathological disturbances of serious character. We believe too that unless proper handling of such a condition is instituted, the nutrition of the child will suffer. Furthermore it is virtually impossible to maintain a clean mouth in the presence of necrotic dental tissue. We do not necessarily advocate the removal of such teeth, but we are satisfied that they should be treated properly and filled and if that is not successful, rather accept the lesser of two evils and extract them.

### SUMMARY

1. Closer and more sympathetic cooperation between the medical and dental profession is advisable.

2. More careful consideration of the deciduous teeth with regard to prevention of disorder and treatment thereof is recommended.

3. Continuation of the study of the effect of diet of the mother on deciduous teeth is advisable.

4. The continuation of and more intensive study of the effect of diet on permanent teeth is advisable.

5. Extraction of abscessed teeth should be done promptly.

6. Training of children in the care of teeth as is now being done by the dental profession is highly commendable.

### REFERENCES

1. Problems of Dental Caries. American Journal of Diseases of Children, September, 1930.
2. Influence of Diet on Bones and Teeth. McKim Marriott, Journal of American Dental Association, 1930.
3. Serving the Child in Dentistry. Hogeboom, Journal of American Dental Association, May, 1930.
4. The Production and Prevention of Dental Caries. Agnew and Tisdall, Journal of Pediatrics, February, 1933.

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Meet Us At The  
HOTEL PATTEN  
Chattanooga  
APRIL 10, 11, 12.

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# THE JOURNAL

OF THE

## TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee  
Office of Publication, 510 Doctors Bldg., Nashville, Tenn.

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authorized July 15, 1932.

H. H. SHOULDERS, M.D., Editor and Secretary

MARCH, 1934

## EDITORIAL

### A COMMUNICATION FROM THE PRESIDENT

#### *Loyalty and Attendance*

For the purpose of stressing the need of sustained interest in organized medicine, as we have it in Tennessee, we may liken our organization to a large family, which regularly holds an annual gathering. Many of these gatherings include, not only blood kin of several generations, but also legally connected members, and sometimes amounting to hundreds of people. Such meetings are climaxed with picnics and other forms of entertainment. Usually the historian of the family advises the clan of outstanding members and relates achievements accomplished during the year. Sorrows are not left untold.

Our State Medical Society is just such an organization. We have grandfathers, fathers, sons, and daughters bound by the common tie of medical brotherhood. We, too, have an annual gathering, which is to be held at Chattanooga this year. Here our membership will gather to hear our sons of prophets and our sons of history relate the sum of their activities during the year. Do not fail to attend this meeting.

It is true that we also have messages of sorrow both real and imaginary. We need to know these because of the cementing influence of a common interest, the more so if that interest be a sad one.

To those members who have been utterly indifferent to the appeal of the mother organization, we urge an interest in her activities. The compensation of knowledge gained and new professional contacts made at this meeting will far exceed any reasonable expenditure of time and money.

We have learned many lessons during the

financial crisis through which we have been passing. One of these is that we must boldly attack the menacing influences both within and without our ranks, which beset us as an organization. Some of our members are either unaware or wholly indifferent to these things. Those of our membership fully or partially informed should exert their influence toward acquainting these indifferent ones with existing conditions. This can be more successfully done at the annual meeting.

As your president, I cordially invite each member of the Tennessee State Medical Society to attend the annual meeting, April 12-14, inclusive.

H. B. EVERETT, M. D.

### THE NEXT MEETING OF THE STATE MEDICAL ASSOCIATION

A meeting of the State Medical Association is important from many standpoints. First, it is important from a scientific standpoint. By and large the best informed men in our profession are those who are in regular attendance on medical meetings. These benefits cannot be appraised with any degree of accuracy.

Another benefit may be classed as inspirational. Each doctor in attendance becomes inspired to put forth additional efforts.

A third benefit is social—doctors after all are human beings. Social contacts at medical meetings are not only enjoyable, they are helpful in keeping one human.

One might go on indefinitely enumerating these benefits, both direct and indirect, but at the present moment there are compelling reasons for a large attendance on our state medical meetings which did not exist a few years ago. Medicine in our state and nation made scientific and cultural progress without outside aid and unhampered by outside influences.

At the present moment outside agencies and influences are making a strong effort—a well financed effort—to wrest from medical hands and heads and hearts the leadership of medicine and to take it in their own hands and to lead us and the public—God knows where.

This condition of affairs furnishes a compelling reason why it is urgently necessary for doctors to develop a cohesiveness in organization in order to combat these influences.

Differences of opinion on scientific subjects are corrected eventually by time and experience. These problems, however, will not wait on such a long process. Gross errors may be made which would require a decade or a century to correct.

These enemies of medicine and the public boast of their strength and of the weakness of medical organization. Their strength lies in cohesiveness. Our weakness is in the lack of it. There are signs, however, that medical men are beginning to appreciate this state of affairs. This must be promoted. There must be developed a single-mindedness as to what is to be done and a determination to do it. When this is done, medicine and the public will be saved from the tragedy that will inevitably result from false leadership.

## THE CHATTANOOGA MEETING

### LOCAL COMMITTEES, ARRANGEMENTS, AND TENTATIVE PROGRAMS

The Chattanooga and Hamilton County Medical Society wishes to extend a cordial invitation to the members of the Tennessee State Medical Association and to their wives to attend the annual state meeting in Chattanooga, April 10, 11, and 12.

The committee on arrangements, with Dr. Wm. J. Sheridan as chairman, and the ladies' entertainment committee, under the direction of Mrs. J. D. L. McPheeters, have plans which we hope will make the stay of both the doctors and their wives pleasant.

We hope that those who have attended a meeting of the Tennessee State Medical Association in Chattanooga will not need any urgent invitation to come back this time. To those who have not been in Chattanooga on such an occasion we do appeal and hope that they will avail themselves of the opportunity of attending an excellent scientific meeting and at the same time of visiting

our attractive city and partaking of our hospitality.

FRANKLIN B. BOGART,

*President, Chattanooga and Hamilton  
County Medical Society.*

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### *Arrangements*

The general headquarters of the Association will be in the Hotel Patten, Chattanooga, Tennessee.

### *Registration*

The registration desk will be on the mezzanine. Members and guests are requested to register on arrival.

### *Sessions*

All general sessions, including the night session, will be held in the convention hall of the Hotel Patten.

The House of Delegates will meet in the Gold Room of the Hotel Patten, 2 P.M., Tuesday, April 10.

### *Sections*

The Railway Surgical Section will meet in the Gold Room of the Hotel Patten.

The Tennessee Academy of Ophthalmology and Otolaryngology will meet April 9 in Dining Room A of the Hotel Patten.

The Tennessee State Pediatric Association will meet April 9 in Dining Room B of the Hotel Patten.

The banquet in honor of the President will be held at the Hotel Patten, April 11, 1934.

### *Lady Guests*

Lady guests and members of the Woman's Auxiliary are requested to register at the registration headquarters on the mezzanine of the Hotel Patten, Chattanooga, Tennessee.

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It is with utmost pleasure that the members of the Chattanooga and Hamilton County Medical Society look forward to meeting the members of the Tennessee State Medical Association and their wives at the Hotel Patten on April 10, 11, and 12, 1934.



## COMMITTEE ON ARRANGEMENTS

William J. Sheridan, M.D., Chairman  
 Wm. D. Anderson, M.D.  
 S. H. Long, M.D.  
 J. C. Brooks, M.D.  
 James L. Bibb, M.D.  
 Cecil E. Newell, M.D.  
 J. E. Nelson, M.D.  
 Charles R. Henry, M.D.  
 Frank F. Harris, M.D.

LADIES' ENTERTAINMENT COMMITTEE OF  
THE WOMAN'S AUXILIARY

Mrs. J. D. L. McPheeters, Chairman  
 Mrs. J. Paul Johnson  
 Mrs. W. J. Sheridan  
 Mrs. James L. Bibb  
 Mrs. Dunbar Newell

PROGRAM OF CHATTANOOGA MEET-  
ING OF THE TENNESSEE STATE  
MEDICAL ASSOCIATION

The following is a tentative program of the general session, together with a program of the Tennessee State Pediatric Association and a program of the Tennessee Academy of Ophthalmology and Otolaryngology.

It will be understood that this tentative program may be altered in several respects when completed. The papers will be rearranged as to their order of appearance and some papers may be omitted and others added, depending on final action by the Program Committee. At any rate, the following is adequate to show that the program will be an excellent one.

Discussers will be added later and the discussers often contribute more to a program than the essayists.

## GUEST SPEAKERS

Henry F. Vaughan, Dr. P. H., Commissioner of Health, Detroit, Michigan. Member of Board, W. K. Kellogg Foundation  
 "Preventive Medicine from the Family Physician"  
 Dr. R. G. Leland, Director, Bureau of Medical Economics, American Medical Association, Chicago, Illinois  
 "Some Causes of Professional Unrest"

Dr. Fred Rankin, Lexington, Kentucky  
 "Diagnosis and Prognosis Following Treatment of Cancer of Rectum"  
 Dr. Edgar F. Fincher, Jr., Atlanta, Georgia  
 "The Management of Brain Injuries"  
 (Part of Symposium)

## TENTATIVE PROGRAM

Dr. T. C. Crowell, Chattanooga  
 "Management of the Asthmatic Patient"  
 Dr. Edward F. Buchner, Chattanooga  
 "Undistorted Radiography in Obstetrics"  
 Dr. G. Victor Williams, Chattanooga  
 "Lymphogranuloma Inguinale"  
 Dr. Earl R. Campbell, Chattanooga  
 "The Use of Unna's Paste Bandage in the Treatment of Pathological Conditions of the Lower Extremities"  
 Dr. R. P. Ball, Chattanooga  
 "Needle (Aspiration) Biopsy"  
 Dr. G. D. LeQuire, Maryville  
 "The Problem of Tuberculosis Infection in Childhood"  
 Dr. Frank L. Alloway, Kingsport  
 "Peroral Endoscopy and Gastroscopy"  
 A treatise on the examination of the stomach and treatment of Gastric Ulcer through the Gastroscope  
 Dr. L. K. Gibson, Johnson City  
 "Management of the Hyperthyroid"  
 Dr. C. W. Friberg, Johnson City  
 "Foetal Indications for Termination of Labor"  
 Dr. E. A. Guynes, Knoxville  
 "Angina Pectoris As Related to Coronary Disease"  
 Dr. Oliver H. Hill, Knoxville  
 "Purulent Pleuritis in Children"  
 Dr. Willis C. Campbell, Memphis  
 "Bone Tumors"  
 Dr. M. G. Spingarn, Memphis  
 "Perinephritic Abscess"  
 Dr. Percy A. Perkins, Memphis  
 "Gas Gangrene"  
 Dr. W. T. Black, Memphis  
 "Retroadisplacements of the Uterus"  
 Dr. J. W. McClaran, Jackson  
 "Postoperative Pulmonary Complications; A Review of the Literature"  
 Dr. George R. Livermore, Memphis  
 "Abdominal Pain. A Symptom Often Referable to the Kidney"

- Dr. J. P. Gilbert, Nashville  
 "Psychopathic Personalities and the Law"
- Dr. Jack Witherspoon, Nashville  
 "Amoebic Dysentery"
- Drs. Howard King and C. M. Hamilton,  
 Nashville  
 "Eczema"
- Dr. W. C. Dixon, Nashville  
 "The Surgical Treatment of Uterine  
 Prolapse"
- Dr. George Carpenter, Nashville  
 "A Pathologic Basis for the Disabled  
 Back"
- Dr. H. L. Douglass, Nashville  
 "The Operation of Sympathectomy in  
 Pathology of the Bladder"
- Dr. J. O. Manier, Nashville  
 "A Comparison of the Existing Relation-  
 ship Between the Medical Profession  
 and the State Health Department in  
 Tennessee and Other Southern States"
- Dr. K. S. Howlett, Franklin  
 "Hydatid Mole; Report of Case"

#### TUESDAY NIGHT, APRIL 10, 1934

- Dr. H. B. Everett, President, Memphis  
 Presidential Address

#### SYMPOSIUM ON THE MANAGEMENT OF COM- MON TRAUMATIC CASES

(A joint meeting of the Section on Railway  
 and Traumatic Surgery with the gen-  
 eral session\*)

- "The Armamentarium for the Treatment  
 of Fractures"
- The Advantages and Dangers of  
 Plaster of Paris
  - The Various Forms of Traction and  
 the Indications for Each
  - Splints. Their Forms and Uses  
 Dr. Battle Malone, Memphis
- "The Management of Traumatic Wounds  
 of Soft Parts"
- (This includes open and contused wounds,  
 blood vessel injuries, nerve injuries;  
 the use of antiseptics and their selec-

tion; the suture and drainage of such  
 wounds)

- Dr. Edward T. Newell, Chattanooga  
 "The Management of Brain Injuries"
- Dr. Edgar F. Fincher, Jr., Atlanta,  
 Georgia  
 "Fractures of the Leg with Special Empha-  
 sis on Fracture Near the Ankle"
- Dr. Duncan Eve, Jr., Nashville

The Tennessee State Pediatric Associa-  
 tion meets Monday, April 9, at the Hotel  
 Patten. All members of the State Medical  
 Association are invited to attend these ses-  
 sions.

#### PROGRAM OF PEDIATRIC ASSOCIATION

- President—Dr. Owen H. Wilson, Nashville,  
 Tenn.
- Vice President—Dr. Wm. D. Anderson,  
 Chattanooga, Tenn.
- Secretary-Treasurer—Dr. Joe T. Smith,  
 Knoxville, Tenn.

#### Executive Committee:

- Dr. John M. Lee, Nashville  
 Dr. Walker Lee Rucks, Memphis  
 Dr. H. R. Casparis, Nashville

9:00 A. M.—Introductory remarks by the  
 President, Dr. Owen H. Wilson, Nash-  
 ville.

9:15—"Endocrinology in Infants and Chil-  
 dren." Dr. Wm. R. Cross, Knoxville.  
 To discuss: Dr. Wm. N. Lackey, Galla-  
 tin; Dr. Rudolph B. McCormick, Mem-  
 phis.

10:00—"The Anemias of Infants and Chil-  
 dren." Dr. Frazier Binns, Nashville.  
 To discuss: Dr. Wm. D. Mims, Mem-  
 phis; Dr. W. T. Mathis, Greeneville.

10:45—"Jaundice in Infants and Children."  
 Dr. Clyde V. Croswell, Memphis. To  
 discuss: Dr. Eugene Rosamond, Mem-  
 phis; Dr. Jas. Overall, Nashville.

11:30—"The Future of Preventive Pedi-  
 atrics." Dr. W. A. Mulherin, Augusta,  
 Ga.

Luncheon, 12:30 to 2 P. M.

Round Table Discussions. (Announce-  
 ments will be made.)

\*Railway Surgeons will have a business meeting  
 at the close of the Symposium.



- 2:00 P. M.—“The Use of Convalescent Serum in Pediatrics.” Dr. Gilbert J. Levy, Memphis. To discuss: Dr. Arthur Quinn, Memphis; Dr. Dulaney Anderson, Chattanooga.
- 2:45 P. M.—“Factors Influencing Neonatal Mortality.” Dr. Milton S. Lewis, Nashville. To discuss: Dr. Joel J. Hobson, Memphis; Dr. Harry Jacobson, Memphis.
- 3:00—“Diabetes Mellitus, the Role of the Oral Administration of Pituitary Gland in Its Treatment.” Dr. Tom Mitchell, Memphis. To discuss: Dr. Jas. A. Smith, Chattanooga; Dr. Beulah Kittrell, Knoxville.
- 3:45—Business Meeting—Election of Officers.

Banquet at 8 P. M. Place and details to be announced.

Papers limited to 20 minutes (except guest speaker). Discussion limited to five minutes.

All members of the Tennessee State Medical Association are especially invited to attend these meetings if they so desire.

#### TENNESSEE ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

Hotel Patten, Chattanooga, Monday,  
April 9, 1934

A Motion Picture of the Radical Antrum Operation with the Transantral Ethmo-spheno Operation

Dr. W. Likely Simpson, Memphis  
“Vincent’s Angina”

Dr. H. E. Christenberry, Knoxville  
“The End Results of Intraocular Foreign Bodies”

Dr. E. C. Ellett, Memphis  
A Motion Picture Illustrating Broncho-scopy

Dr. W. D. Stinson, Memphis  
“Dr. Elschnig’s Surgical Clinic in Memphis”

Drs. P. M. Lewis, M. G. Seligstein,  
R. O. Rychener, Memphis  
“Some Aspects of Otosclerosis”

Dr. Henry Cunningham, Knoxville  
“The Relation of Allergy to Ophthalmology”  
Dr. Kate Savage Zerfoss, Nashville

## DEATHS

Major Paul Edgar McNabb, Medical Corps, U.S.A., died at Walter Reed General Hospital, Washington, D. C., on February 24, 1934, of a rapidly progressive hypertensive disease and cerebral hemorrhage. He was born in Sevier County, Tennessee, May 25, 1887, but at the age of five years, moved with his parents to Knoxville, Tennessee, his boyhood home. He graduated in medicine at the University of Pennsylvania in 1912 and returned to his home city where he practiced medicine for several years with his father, Dr. Charles P. McNabb, a distinguished physician in Knoxville and widely known consultant throughout the State of Tennessee.

Major McNabb was an honor graduate of the Army Medical School in 1917 and served overseas in France during the World War. He graduated from the advanced course, Army Medical School, in 1921 and was assigned to the laboratory service of the Medical Department where he served with distinction in many difficult assignments including the Second Corps Area Laboratory, New York; Board of Health Laboratory, Ancon, Canal Zone; Walter Reed General Hospital and the Army Medical School. During this service he achieved the distinction of being regarded as one of the outstanding pathologists in the Army Medical Corps. He was Curator of the Army Medical Museum from February, 1931, to January, 1933, and was President of the U. S. Army Medical Department Research Board in Manila, P. I., at the time he was stricken with the illness which forced him to return to the United States.

Always interested in research, he published articles on Postmeasles Pneumonia; Quinine Prophylaxis in Army Troops in the Canal Zone; Coronary Sclerosis in Angina Pectoris and the Presence and Significance of Albuminuria in the Personnel of a Citizens Military Training Camp. In collaboration with others he published articles on Hemochromatosis and Congenital Heart Block.

Major McNabb was a Fellow of the American Medical Association, Fellow of the American College of Physicians, and a member of the American Association of Pathologists and Bacteriologists, the International Association of Medical Museums and the National Board of Medical Examiners representing the U. S. Army Medical Corps. He was also an honorary life member of the Knox County Medical Society.

An indefatigable worker for the interests of the Laboratory service, Major McNabb was keenly interested in the welfare and advancement of its personnel, especially the junior members of that service. Possessed with professional ability, charming personality and more than ordinary tact he quickly obtained the friendship and respect of those who were privileged to be associated with him. His untimely death during the years of greatest productivity is a distinct loss to the Medical Corps.

In 1913 he married Miss Therese Franz of Knoxville, Tennessee, who with their daughter, Jane Gordon McNabb, age 17, survives him.

## WOMAN'S AUXILIARY

*President*.....Mrs. W. O. Floyd, Nashville  
*President-Elect*....Mrs. Willis Campbell, Memphis  
*Press and Publicity* .....

.....Mrs. W. W. Wilkerson, Jr., Nashville

Those of you who have attended state meetings of the Auxiliary—who have enjoyed the interchange of ideas with other women who listen to the same sort of “shop” talk that you listen to, women who have much the same pleasures and worries that you have, and who are just as eager as you are to be helpful wives to members of the finest profession in the world—you know the satisfaction and encouragement which comes from such contacts. We hope that those of you who have not attended a previous meeting will come to Chattanooga next month and enjoy this rich experience.

Trusting that each member will join us at the state meeting of 1934, we print with pleasure the following program:

## ANNUAL MEETING OF THE WOMAN'S AUXILIARY TO THE TENNESSEE MEDICAL ASSOCIATION

April 10, 11, 12, 1934  
 Chattanooga, Tennessee

### HOSTESS COMMITTEE

Mrs. J. D. L. McPheeters, Chairman  
 Mrs. James L. Bibb  
 Mrs. W. J. Sheridan  
 Mrs. Paul Johnson  
 Mrs. Dunbar Newell  
 Mrs. Franklin B. Bogart

### TUESDAY, APRIL 10

Registration: Patten Hotel  
 1:30 P. M.: Pre-Convention Board Meeting, Mrs. W. O. Floyd, presiding. Assembly room  
 3:00 P. M.: Sightseeing trip  
 7:00 P. M.: Executive Board Dinner. Mrs. W. O. Floyd and Mrs. Willis Campbell, hostesses

### WEDNESDAY, APRIL 11

10:00 A. M.: Annual Meeting of the Woman's Auxiliary to the Tennessee State Medical Association called to order, Mrs. W. O. Floyd, presiding  
 Invocation: Dr. T. S. McCallie  
 Address of Welcome: Mrs. Franklin B. Bogart  
 Response: Mrs. Edward Clay Mitchell  
 Address: Mrs. James Blake, National President  
 Report of Hospitality Chairman: Mrs. J. D. L. McPheeters  
 “The Public and Its Medicine,” by Mrs. W. W. Wilkerson, to be read by Mrs. Theodore Morford  
 Treasurer's Report  
 Report of State Chairmen and Standing Committees  
 Old Business  
 New Business  
 Report of Nominating Committee  
 1:00 P. M.: Luncheon at the Coffee Shoppe. (Tickets available at the Registration Table.)  
 3:00 P. M.: General Round Table Conference, Mrs. W. O. Floyd, presiding. Assembly room



7:00 P. M.: Bridge Dinner, honoring visitors. Read House

#### THURSDAY, APRIL 12

10:00 A. M.: Post Convention Board Meeting, Mrs. Willis Campbell, presiding. Assembly room

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The Woman's Auxiliary to Davidson County Medical Society entertained, with the following program, the wives of members attending the meeting of the Southeastern Surgical Congress in Nashville, March 5, 6, 7:

#### MONDAY, MARCH 5

9:00 A. M.: Registration—Andrew Jackson Hotel, headquarters  
 4:00 to 6:00 P. M.: Auxiliary Tea, honoring visitors, at the home of Dr. and Mrs. T. G. Pollard  
 8:30 P. M.: Informal Reception, Andrew Jackson Hotel

#### TUESDAY, MARCH 6

Drive to the Hermitage, the historical home of Andrew Jackson, with luncheon in "Uncle Alfred's" cabin  
 Tuesday evening. Annual Banquet, Andrew Jackson Hotel

#### WEDNESDAY, MARCH 7

10:00 A. M.: Drive through the city

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### REPORTS OF LOCAL AUXILIARIES

#### KNOX COUNTY

Mrs. H. E. Christenberry, President

The Auxiliary of the Knox County Medical Society met on the morning of February 7 at the home of the president, Mrs. H. E. Christenberry. A large attendance enjoyed the splendid meeting. A number of guests, all doctors' wives, were present. Mrs. Robert Watson gave a paper on "Why Die Before Your Time?" and Mrs. Oliver Hill gave one on "Early Medical Education," a paper which had been read by Mrs. Collum of Texas, at the S. M. A. Convention at Richmond, Va. The two interesting papers were greatly enjoyed. A lovely luncheon, furnished by the members of the Auxiliary, was served, and a social hour followed.

During the luncheon, Mrs. Edward Clayton favored the group with several piano numbers. Mrs. Christenberry announced an invitation from the Knox County Medical Society to the Auxiliary to attend their next meeting.

On Tuesday, February 13, the ladies of the Knox County Auxiliary were the guests of the Knox County Medical Society at their meeting at the Andrew Johnson Hotel. The doctors seemed pleased to have a large number of the ladies present. Dr. Robert Wood read an interesting paper. Mrs. Christenberry, upon being asked to make a speech, took the opportunity to explain the object of the Auxiliary. Miss Elizabeth Kerr gave a reading, and Mrs. G. W. Stone, accompanied by Mrs. Dewey Peters, sang several numbers. Refreshments were served. All enjoyed the social hour, and the Auxiliary felt highly honored by the invitation from the Medical Society.

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#### SHELBY COUNTY

Mrs. Percy Toombs, President

No February report was received from this Auxiliary.

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#### DAVIDSON COUNTY

Mrs. B. F. Byrd, President

Instead of their regular monthly meeting, the members of the Auxiliary gave, on March 2, a benefit bridge breakfast in the clubrooms of the Sterchi Furniture Company. The purpose of this party was to raise fifty dollars for Davidson County Auxiliary's contribution to the Ways and Means Committee of the State. As a result of this enterprise the aim was reached, and fifty dollars was sent to Mrs. Fraser, the State Treasurer, and a surplus of seventeen dollars was added to the local treasury. Three new members joined the Auxiliary during the month—Mrs. R. C. Bunch, Mrs. R. L. Dozier, Jr., and Mrs. D. L. Mishler.

We expect to have with us at the Annual Meeting of the State Auxiliary our National President, Mrs. James Blake of Hopkins, Minn.

## NEWS NOTES AND COMMENTS

Dr. M. K. Moulder announces the opening of an office in association with Dr. S. T. Ross, 501 Doctors Building, Nashville.

We have been notified by the post office of the following changes of address: Dr. A. R. Porter, Jr., 899 Madison Ave., Memphis, to 1403 Montana St., El Paso, Texas. Dr. J. F. Bradley, 1460 Madison Ave., to 154 N. Cooper Ave., Memphis. Dr. H. G. Bland, Etowah, to Medical Arts Bldg., Newport News, Virginia. Dr. Perry Gambill, Route 7, Knoxville, to Grey Stone Park, New Jersey. Dr. G. Madison Roberts, Volunteer Bldg., to 912 James Bldg., Chattanooga.

### THE PASTEURIZATION OF MILK

Milk is an excellent medium for many dangerous bacteria as well as an excellent food for man. Disease germs may enter the milk directly from an ailing cow, be introduced by insects, or be transferred to the milk by the fingers or mouth-spray of persons having to do with the collection or transportation of milk.

Once in the milk, some of the disease germs may multiply enormously. Extensive epidemics of typhoid, scarlatina, diphtheria, septic sore throat and other diseases are sometimes caused by contamination of milk supplies. Numerous cases of tuberculosis and undulant fever have been caused by raw milk.

Even when great care is used in overseeing the health of the cattle and of the milkers and in maintaining the cleanliness of the dairy, there remain many possibilities of contamination. A milker may become overnight an unwitting carrier of some disease germ in his nose or throat; a typhoid carrier might be unknowingly employed in a most carefully conducted dairy.

Since disease germs are readily destroyed by well established methods of pasteurization, all milk for direct human consumption or for use in ice cream, cheese or other

milk products should be pasteurized according to officially approved methods. After pasteurization the milk should be so stored and protected that it will not be contaminated. Liquid pasteurized milk should be retailed in sealed bottles.

The pasteurization of milk is a public health measure. The public should demand pasteurized milk for drinking and the use of pasteurized milk in milk products. The dairy trade should universally adopt pasteurization in the interest of public health.

There is no cogent evidence that pasteurized milk is significantly inferior nutritionally to raw milk.

### COMMUNICATIONS

Chattanooga, Tennessee,  
March 7, 1934.

H. H. Shoulders, M. D.,  
Sec'y State Medical Association,  
Nashville, Tennessee.

Dear Doctor and friend:

It is with much gratitude and love for the medical fraternity and all its members that I gratefully acknowledge your card as recognizing me as a member of the Hamilton County and State Medical Societies, of which they have so kindly made me an honorary member, after more than 45 years of constant and loyal membership in this society.

I love the memory of all the deceased membership, as well as those now living, and can recall more than 50 years ago, when I was in the offices of Dr. Duncan and the late Dr. Paul F. Eve, having stayed there about two years in the study of my profession while in the University of Tennessee Medical Department, then located in Nashville, afterward removed to Memphis.

It is a strange coincident that 25 years previous to that time, my father, Dr. Franklin Bogart, of Sweetwater, Tenn., now deceased, was serving an internship with Dr. Paul F. Eve, Sr., in the same office. I state this as an incident which occurred more than 75 years ago.

Fraternally yours,

W. G. BOGART.



## LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. H. B. Everett, Memphis.  
 Vice President for East Tennessee—Dr. K. C. Copenhaver, Knoxville.  
 Vice President for Middle Tennessee—Dr. W. S. Rude, Ridgetop.  
 Vice President for West Tennessee—Dr. G. G. Mulherin, Brownsville.  
 Secretary-Editor—Dr. H. H. Shoulders.  
 Assistant Secretary-Editor—Dr. W. M. Hardy.

### TRUSTEES

Chairman and Treasurer—Dr. J. O. Manier, Doctors Building, Nashville.  
 Dr. Ralph Monger, Medical Arts Building, Knoxville.  
 Dr. W. L. Williamson, Sterick Building, Memphis.  
 Dr. W. P. Wood, Medical Building, Knoxville.  
 Dr. E. R. Zemp, Walnut Street, Knoxville.

### COUNCILORS

First District—Dr. T. B. Yancey, Kingsport.  
 Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. J. H. Revington, Chattanooga.  
 Fourth District—Dr. J. T. Moore, Algood.  
 Fifth District—Dr. John W. Sutton, Petersburg.  
 Sixth District—Dr. L. W. Edwards, Nashville.  
 Seventh District—Dr. B. T. Nolen, Franklin.  
 Eighth District—Dr. J. R. Thompson, Jackson.  
 Ninth District—Dr. E. H. Baird, Dyersburg.  
 Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.  
 Dr. H. H. Shoulders, Nashville; Middle Tennessee.  
 Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.  
 Dr. M. M. Cullom, Nashville; Middle Tennessee.  
 Dr. E. C. Ellett, Memphis; West Tennessee.

## OFFICERS OF COUNTY MEDICAL SOCIETIES FOR THE YEAR 1934

County	President	Vice President	Secretary-Treasurer
Anderson	J. M. Cox, Coal Creek	Thomas Jennings, Clinton	J. S. Hall, Clinton
Bedford	S. S. Moody, Shelbyville	W. T. Sharp, Farmington	Alfred Farrar, Shelbyville
Blount			H. A. Calloway, Maryville
Bradley	E. R. Ferguson, Cleveland	Vance H. Bell, Cleveland	D. N. Arnold, Cleveland
Carroll	O. W. Fesmire, McKenzie	E. W. Hillsman, Trezevant	J. H. Williams, McKenzie
Campbell	R. J. Buckman, Westbourne	S. S. Brown, Jellico	F. A. McClintock, Newcomb
Cocke			J. E. Hampton, Newport
Davidson	John M. Lee, Nashville	W. G. Kennon, Nashville	N. S. Shofner, Nashville
Chester, Henderson, and Decatur			Wm. I. Howell, Lexington
Dyer, Lake, and Crockett	W. S. Alexander, Ridgely	B. G. Marr, Dyersburg (Dyer)	J. Paul Baird, Dyersburg
		R. E. Hellen, Ridgely, (Lake)	F. L. Roberts, Trenton
Gibson	Featherston Douglas, Dyer	Paul D. Jones	T. F. Booth, Pulaski
Giles	John Morris, Pulaski	Joe B. Wright, Lynnville	M. A. Blanton, Mosheim
Greene	C. P. Fox, Greeneville	L. E. Dyer, Greeneville	Wm. J. Sheridan, Chattanooga
Hamilton	Franklin B. Bogart, Chattanooga	James L. Bibb, Chattanooga	
Hardin, Lawrence, Lewis, Perry, and Wayne	J. W. Danley, Lawrenceburg		C. C. Stockard, Lawrenceburg
Haywood	R. T. Keeton, Brownsville	Glenn T. Scott, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear		R. G. Fish, Paris
Hickman	L. F. Pritchard, Only	C. V. Stevenson, Centerville	W. K. Edwards, Centerville
Humphreys			W. W. Slayden, Waverly
Jackson	J. D. Quarles, Whitleyville	R. C. Gaw, Gainesboro	F. B. Clark, Gainesboro
Knox	E. A. Guynes, Knoxville	H. T. McClain, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	J. L. Dunavant, Ripley	T. E. Miller, Ripley	J. R. Lewis, Ripley
Lincoln	J. E. Sloan, Boons Hill		J. M. McWilliams, Fayetteville
Macon	D. D. Howser, Lafayette		J. Y. Freeman, Lafayette
Madison	Kelly Smythe, Bemis	Swann Burrus, Jackson	S. M. Herron, Jackson
Maury	Robert Pillow, Jr., Columbia	C. O. Fowler, Springhill	
McMinn	W. R. Arrants, Athens	Watt Keiser, Columbia	C. D. Walton, Mt. Pleasant
McNairy	John R. Smith, Selmer	D. P. Brendle, Englewood	R. W. Epperson, Athens
Monroe		G. B. Curry, Selmer	H. C. Sanders, Selmer
Montgomery			W. J. Cameron, Sweetwater
Obion	W. B. Harrison, Union City	Ilar Glover, Union City	Paul E. Wilson, Clarksville
Overton			Frank Kimzey, Union City
Polk	H. P. Hyde, Copperhill	T. J. Hicks, Copperhill	A. B. Qualls, Livingston
Putnam	J. T. Moore, Algood	T. M. Crane, Monterey	F. O. Geisler, Isabella
Roane			Thurman Shipley, Cookeville
Rutherford	W. T. Robison, Murfreesboro	J. D. Hall, Readyville	W. W. Hill, Harriman
Scott			J. A. Scott, Murfreesboro
Sevier	O. H. Yarberrry, Sevierville	R. J. Ingle, Sevierville	D. M. Woodward, Huntsville
Shelby	W. L. Williamson, Memphis, J. B. Stanford, Memphis, President-Elect	W. L. Rucks, Memphis	C. P. Wilson, Sevierville
Sullivan and Johnson	W. K. Vance, Jr., Bristol	J. V. Hodge, Kingsport (Sullivan)	J. J. Hobson, Memphis, Treasurer;
		J. C. Hutchinson, Crandall (Johnson)	A. F. Copei, Memphis, Secretary
Smith	W. B. Dalton, Gordonsville	R. E. Key, Monoville	Arthur Hooks, Bristol
Tipton	G. B. Gillespie, Covington		Thayer S. Wilson, Gordonsville
Washington	N. F. Hartsook, Johnson City	W. J. Mathews, Johnson City	L. J. Lindsey, Covington
Weakley	T. W. Fields, Dresden	T. V. Hannings, Martin	C. H. Long, Johnson City
White	R. E. Lee Smith, Doyle	E. B. Clark, Sparta	E. J. Huey, Martin
Williamson	H. C. Stewart, Franklin	Dan German, Jr., Franklin	A. F. Richards, Sparta
Wilson	S. B. McFarland, Lebanon	R. L. Witherington, Lebanon	K. S. Howlett, Franklin
			J. R. Bone, Lebanon

## STANDING COMMITTEES

LEGISLATIVE AND PUBLIC POLICY  
COMMITTEE

Dr. H. M. Tigert, Chairman, Nashville.  
 Dr. Battle Malone, Memphis  
 Dr. Tom Barry, Knoxville

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Dr. H. H. Shoulders, Chairman, Nashville  
 Dr. John R. Smoot, Knoxville  
 Dr. E. Dunbar Newell, Chattanooga  
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## COMMITTEE ON EDUCATION

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 Dr. J. T. Smith, Knoxville  
 Dr. F. T. Mitchell, Memphis  
 Dr. William Dulaney Anderson, Chattanooga

ADVISORY COMMITTEE TO THE WOMAN'S  
AUXILIARY

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 Dr. G. Victor Williams, Chattanooga  
 Dr. Percy H. Wood, Memphis  
 Dr. Dewey Peters, Knoxville

## COMMITTEE ON MEDICAL EDUCATION

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 Dr. Herbert Acuff, Knoxville  
 Dr. W. H. Witt, Nashville

STATE TUBERCULOSIS HOSPITAL  
COMMISSION

Dr. J. B. Naive, Chairman, Knoxville  
 Dr. William S. Rude, Ridgetop  
 Dr. H. R. Townsend, Oakville

## HOSPITAL COMMITTEE

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 Dr. C. F. Anderson, Nashville  
 Dr. B. F. Hardin, Memphis  
 Dr. R. H. Newman, Knoxville  
 Dr. F. J. Runyon, Clarksville  
 Dr. J. D. Brewer, Dyersburg

## CANCER COMMITTEE

Dr. W. B. Burns, Chairman, Memphis  
 Dr. S. S. Marchbanks, Chattanooga  
 Dr. A. G. Kern, Knoxville  
 Dr. John C. Burch, Nashville  
 Dr. W. T. Black, Memphis  
 Dr. Howard King, Nashville  
 Dr. J. R. Thompson, Jackson  
 Dr. N. H. Copenhagen, Bristol  
 Dr. A. H. Lancaster, Knoxville

## MEDICAL DEFENSE COMMITTEE

Dr. S. R. Miller, Knoxville  
 Dr. H. B. Everett, Memphis  
 Dr. H. M. Tigert, Nashville

## LIAISON COMMITTEE

Dr. J. L. Raulston, Knoxville (four years)  
 Dr. W. C. Dixon, Chairman, Nashville (three years)  
 Dr. W. P. Wood, Knoxville (two years)  
 Dr. J. G. Gallagher, Nashville (one year)  
 Dr. J. C. Ayers, Memphis (five years)

## MEDICAL SOCIETIES

*Blount County:*

The society meets every Thursday at 8 P. M. in the First National Bank Bldg. Future programs have been announced as follows:

March 15—"Preventive Treatment of Eclampsia," by Dr. C. F. Crowder.

March 22—"Modern Treatment of Malaria," by Dr. S. S. Kittrell. To open discussion, Dr. O. F. Agee.

March 29—"Fertility in the Male," by Dr. W. B. Lovingood. To open discussion, Dr. E. H. Lowe.

April 5—"Coronary Thrombosis," by Dr. G. D. LeQuire. To open discussion, Dr. D. R. Thomas.

April 12—"Causes and Treatment of Jacksonian Epilepsy," by Dr. J. W. Norton. To open discussion, Dr. J. E. Hall.

"Sterility in Women," by Dr. R. L. Hyder. To open discussion, Dr. J. M. Waters.

*Chattanooga and Hamilton County:*

Meetings are held each Thursday at 8 P. M. in the Medical Arts Bldg. Subjects are announced as follows:

March 22—"The Correlation of the Old and New Facts About Cancer," by Dr. J. Marsh Frere.

March 29—"Middle Ear Infections," by Dr. T. Lyles Davis. "Lengthening the Span of Life," by Dr. B. L. Jacobs.

April 5—"X-ray in Dystocia," by Dr. E. F. Buchner.

*Davidson County:*

February 14—"Some Principles of Physical Therapy in the Rehabilitation of the Disabled," by Dr. John S. Coulter, Professor of Physical Medicine, Northwestern University, Chicago.

February 14—"The Management of Diabetes Mellitus," by Dr. Elliot P. Joslin of Boston.

February 21—An address by Dr. Henry



F. Vaughan, City Health Officer, Detroit, Mich.

February 21—"Auricular Febrillation," by Dr. C. C. Maher, Assistant Professor of Medicine, Northwestern University, Chicago.

February 27—"The Significance of the Chicago Epidemic Amoebic Dysentery," by Dr. H. E. Meleney. Discussion opened by Dr. Jack Witherspoon.

March 6—No meeting of the Academy because of the session of the Southeastern Surgical Congress.

March 13—"Some Observations on the Use of Crowe's Vaccine in Rheumatic Conditions," by Dr. J. B. Hibbitt, Jr.

March 20—"Low Back Pain," by Dr. Wallace Duncan of the Cleveland Clinic.

March 27—"Irradiated Vitamin D Milk," by Dr. H. T. Scott of the Wisconsin Alumni Research Foundation.

#### *Henry County:*

Dr. A. F. Paschall of Puryear was re-elected president of the Henry County Medical Society at a meeting held February 10, in the county court room in Paris. Other officers chosen were Dr. Elroy Scruggs, vice president, and Dr. R. Graham Fish, secretary and treasurer.

Dr. R. B. Howard was elected a member, having recently moved to Paris from Memphis to form a connection with Dr. A. A. Oliver in the practice of medicine.

Next scheduled meeting of the society is set for Tuesday, March 27, in the county court room in Paris.

Those present at the meeting Saturday were R. J. Perry of Manlyville, G. T. Abernathy, Elroy Scruggs, George and J. H. McSwain, A. A. Oliver, George Boone, W. G. Rhea, Ike Jones, R. G. Fish of Paris, and A. F. Paschall of Puryear.

#### *Knox County:*

February 6—"Acute Suppurative Osteomyelitis," by Dr. Chas. F. Clayton. Discussion opened by Dr. E. S. Clayton.

February 13—Paper by Dr. R. B. Wood. Discussion opened by Dr. E. R. Zemp. The

subject was not announced in advance. The meeting was followed by "light diet" ordered by the officers. No collection was taken.

February 20—"The General Practitioner and Otology," by Dr. Edgar Grubb. Discussion opened by Dr. Henry Cunningham.

February 27—"Ileus," by Dr. Roberts. Discussion opened by Dr. Clyde Copenhaver.

March 6—Dr. Waterhouse's paper was discussed by Dr. E. G. Wood.

#### *Shelby County:*

March 6—Case Reports: "Traumatic (?) Bilateral Inguinal Herniæ," by Dr. A. R. McMahan. "Stricture of Common Duct," by Dr. E. D. Mitchell, Jr.

Papers: "The Detroit Plan," by Dr. W. D. Stinson. "Conservation of Motherhood," by Dr. J. C. Ayres. Discussion, Dr. W. T. Pride, Dr. W. T. Black.

#### *Washington County:*

The April meeting will be held on the fifth. Dr. W. M. Bevis will read a paper on "Early Recognition of Psychoses by the General Practitioner and the Advantages of Early Treatment." Discussion by Dr. Sandorf.

A neurological subject by Dr. W. G. Preas. Discussion by Dr. Friberg.

#### *Wilson County:*

Dr. J. R. Doak will be the essayist at the meeting to be held on April 5. The subject will be "Nephritis."

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Time-Shock Factors in General Anesthesia. W. M. Kemp, M.D., Vancouver, B. C. The American Journal of Surgery, February, 1934.

The author's purpose in this article was to discuss the fundamental intrinsic and extrinsic conditions that modify and control a person's ability

to undergo with safety surgery under general anesthesia with special reference to time as a factor in the production of surgical shock. In the discussion he mentions time-shock as related to the general condition of the patient, to the operation, and to the anesthetic. Time-shock factors relating to the general condition of the patient include the condition of the vital organs, presence of dehydration, anemia, and the presence of such well known endocrine disturbances as diabetes, hyperthyroidism, Addison's Disease, and enlarged thymus gland. Patients show a varying degree of resistance to anesthesia and operation. Some may endure five or six hours of anesthesia, while others succumb to the first few whiffs. There is a definite relation between the adrenal cortex, thyroid gland, and lymphoid tissue, especially the thymus gland.

In several sudden deaths during anesthesia post-mortem examination showed enlarged thymus gland. He believes enlarged glands were due to hypofunction of the adrenal cortex and thyroid. Time-shock as related to the operation is due to lack of preoperative preparation, shock producing nature of the operation, rough handling of the viscera, tight upper abdominal packs, posture, loss of body fluid from hemorrhage and perspiration. Time-shock as related to anesthesia includes fear, rapid or stormy induction, unsuitable anesthetic, uneven plane of anesthesia, failure to offset dehydration, failure to maintain open airway and oxygenation, handicapping posture, and undue cooling of patient.

### DERMATOLOGY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

The Association of Eczema with Alteration in Gastric Secretions. By O. S. Philpott, M.D., Denver, Colorado. Colorado Medical Journal, August, 1933.

The author states that eczema has no specific etiology. There are staunch advocates to the theory that it is of internal origin and staunch advocates to the theory that it is of external origin.

During the last few years he has been paying particular attention to its association with alterations in the gastric secretion. Fifty cases were selected from the ordinary types of eczema. The ages ranged from eighteen to eighty years and both males and females were equally represented. Only seven gave a history of gastrointestinal dysfunction; however, ninety-two per cent showed an alteration in gastric secretion. The type of eczema did not seem to have any connection with the hydrochloric acid curve. Of eighteen cases that were classed as erythematous-squamous, ten showed a deficiency of hydrochloric acid and seven showed an excess. Two of these cases were hospitalized at the same time, and each of them showed a similar type of eczema. Neither carried a history of gastric disturbance, and yet one had a gastric

analysis of free HCL, 55 and total acidity, 95. The other had an achlorhydria.

Of the total number of cases four showed no improvement, two a slight improvement and forty-four showed improvement varying from relief of itching and discomfort to complete remission of all objective and subjective symptoms. Rest in bed, proper diet and soothing local applications all gave some relief within themselves, but nothing to compare with the often startling improvement seen in many of these cases where these measures were combined with correction of gastric dysfunction.

Of the fifty cases, forty-eight per cent showed hypoacidity, forty-four per cent showed hyperacidity, and eighty-six per cent gave no history of gastric disturbance.

The author concludes that gastric analysis is of great importance before instituting treatment for eczema.

### OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

Corneal Transplant Remaining Transparent in Traumatic Leukoma. Zykulenko and Welter. Archives of Ophthalmology, February, 1934.

A man, aged 31, suffered a nonperforating injury of the right eye, which resulted in a leukoma. Corneal transplantation by the method of von Hippel was performed five months later, one day after a posterior sclerotomy for painful secondary glaucoma. The eye of a woman, aged 52, was enucleated for traumatic iridocyclitis with occlusion of the pupil and secondary glaucoma. The button or transplant was taken from this eye. The site of the trepanation was covered with the membrane of an egg for two days. The button became opaque on the eighth day, but had cleared a week later; another period of opacification, lasting four days, occurred after three weeks. The anterior chamber was reestablished after five days. The button was transparent and vision was 4/10 six and nine months after the operation. The authors stress the fact that they operated before the lapse of twelve months after the accident, which is considered desirable for obtaining favorable results. They attribute the permanent transparency of the button to its close contact with transparent corneal tissue, which is deemed necessary by Elschnig and Ascher.

The Pupillary Test for the Diagnosis of Pregnancy. Z. Bercovitz. The American Journal of Ophthalmology, February, 1934.

In a previous report, the author demonstrated that the freshly obtained serum of a pregnant woman instilled into her own conjunctival sac would cause an alteration in the size of the pupil. As the test is described in this article, whole blood is substituted for the serum. There may be either



dilation or contraction of the pupil. The other eye is used for comparison and control. Of 382 patients tested, 154 were not pregnant, and none of these showed a positive pupillary reaction. In the remaining 183 patients the diagnosis of pregnancy was confirmed later, and of these, 155, or 85.7 per cent, showed positive pupillary reactions.

### **SURGERY—GENERAL AND ABDOMINAL**

By ROBIN F. MASON, M.D., F.A.C.S.  
735 Medical Arts Building, Memphis

Infections in the Dangerous Circle of the Face. Dr. V. W. Murray Wright, University of Pennsylvania. *Surgical Clinics of North America*, December, 1932, Page 1567.

Infections of the so-called "dangerous circle" of the face have at times a mortality upwards of 50 per cent.

The infections are carbuncles, furuncles and infected hair follicles, usually of the lips and nares. This area is dangerous because of the frequency of fatal infective thrombosis of the intracranial sinuses.

Babcock reports that 20 per cent of carbuncles of the upper lip develop this invariably fatal complication. Others report the mortality of sinus thrombosis as high as 100 per cent. This complication is partly due to anatomico-pathological factors and injudicious squeezing.

The nose and lips are drained through the facial vein into the external jugular vein. The angular vein on the upper inner aspect of the nose connects the superficial venous system with the deeper intracranial venous channels. The importance, therefore, of the angular vein is at once apparent.

Infections not involving this "corridor of death" seldom prove fatal.

Treatment: (1) Prophylaxis. (2) Conservative surgery. (3) Careful watching for impending complications.

Prophylaxis consists of warning against plucking nasal hairs, squeezing comedones, etc.

Conservative surgery consists of avoidance of incising infected areas and of local applications to threatened infections.

The author never uses the knife because so doing breaks down the natural leukocytic barriers and opens up channels for general sepsis.

Cautery puncture avoids these two evils.

Small furuncles are treated by puncture over their center with a phenolized needle inserted at right angles to the skin. Larger furuncles are punctured with the actual cautery.

Carbuncles are excised with the "radio knife" in a circular manner.

A septic thrombosis of the facial, nasal or an-

gular veins is evidenced by a thickened tender cord-like feel beneath the skin. This stage is not fatal provided the vein is immediately severed, preferably with the actual cautery. This stops the spread.

One or more veins may have to be thus treated.

The point of election for severing the angular vein is medially and about one-third inch below the inner canthus of the eye.

Anaesthesia: Local anaesthesia should never be used.

Results: The author has by this treatment in some 30 cases enjoyed a mortality of less than 10 per cent in contrast to the usual mortality of 25 to 50 per cent.

He believes his success has been due to unhesitatingly applying radical methods before dread complications have arisen.

### **BOOK REVIEW**

The History and Epidemiology of Syphilis. By Wm. Allen Pusey, A.M., M.D., LL.D., Professor of Dermatology Emeritus, University of Illinois, some time President of the American Dermatological Association and of the American Medical Association. Price, \$2.00.

This little book in its silver cloth binding will be a valuable and interesting addition to any library. It is a reproduction of the Gehrman Lectures, delivered at the University of Illinois College of Medicine and is replete with illustrations ranging from pictures of the early methods of treating syphilis and ancient syphilitic bones to pictures of such renown investigators and medical notables as Gabrielle Falloppio, Giovanni Morgagni, Rudolph Virchow, Sir Jonathan Hutchinson, Wassermann, Ehrlich, etc.

The weight of the evidence according to Dr. Pusey shows that syphilis originated in America and was introduced into Europe after Columbus' first voyage to America. He says in part, "And yet no evidence in literature of the Pre-Columbian origin of syphilis that will pass close scrutiny has been produced."

In regard to the prevalence of active infectious syphilis he cites a survey of the United States Public Health Service in cooperation with the American Social Hygiene Association. This survey of 26,000,000 people showed that 4.26 persons per thousand of population were under treatment for syphilis at the time. This, of course, does not show the actual prevalence of syphilis, as there are many cases not treated, and many treated but not reported.

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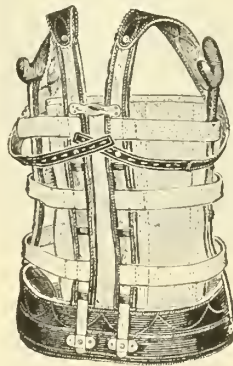
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### SPINAL CORD COMPRESSION WITH ABSTRACTS OF CASES\*

THOS. D. MCKINNEY, M.D., F.A.C.S., Nashville

COMPRESSION of the spinal cord may be produced by a large variety of lesions. Recovery of cord function following compression depends upon the duration as well as the degree of the compression. Therefore, it is highly important that the evidence of pressure on the spinal cord be recognized at the earliest possible moment. It is for this reason I feel justified in giving this brief elementary discussion of the subject of cord compression, together with some case abstracts with lantern slide illustrations. These cases were chosen with the idea of demonstrating a variety of causative pathology.

#### SIGNS AND SYMPTOMS

The signs and symptoms of compression vary greatly, depending upon the degree and the duration of compression present, and upon the location of the lesion—that is, the level of the cord involved. In substance, the signs and symptoms are the result of disturbance of sensory and motor nerve function below the level of the lesion.

In acute compression, as in cases of fracture-dislocation of a vertebra, there may be immediate and complete loss of all sensory and motor function below the level of the lesion. In the early course of slow-growing tumors, there may be little or no disturbance of cord function other than pain due to spinal nerve root compression at the level

of the lesion. Many of these cases are treated as sciatica, neuralgia, etc., for years before the correct diagnosis is made.

The typical history of the course of extramedullary spinal cord tumor is that the patient begins to have neuralgic pain, referred to the chest, the abdomen or extremities, either upper or lower. The pain may appear suddenly and be continuous for months, or it may be intermittent. It is always severe and is often made worse by movements of the spine, and by forceful respiratory efforts, as in sneezing and coughing. The patient is often treated for neuritis, intercostal neuralgia, sciatica, etc., for months or years before a spinal cord lesion is suspected. After such pressure on the cord has existed for a number of months the sensations of numbness and tingling make their appearance. Stiffness in one lower extremity is noticed, soon to be followed by loss of motor power, usually on one side first, later the other side is involved. After the loss of sensation and motor power, then disturbance of the bladder and rectal functions usually appears. If the condition is not relieved, the patient develops complete motor and sensory paralysis of the extremities, with disturbance of bladder control and marked constipation, and finally there are signs of a complete transverse lesion of the cord: viz., loss of all motor power, all sensation and all reflexes below the level of the lesion and loss of bladder and rectal control.

\*Read before the Tennessee State Medical Association, Nashville, April 11, 12, 13, 1933.



The symptoms produced by tumors within the substance of the cord are similar to those of extramedullary tumors. However, the onset is more frequently *without* pain. The phenomena designated as dissociation of sensory function is more frequently encountered. This phenomena consists of a loss of pain and temperature sense, with the preservation of the tactile and deep sensibility.

### DIAGNOSIS

When the diagnosis of spinal cord compression is made, it is important to know the type of lesion present and the level of cord segment involved. Careful attention to the chronological order in which symptoms appear is quite important. A thorough neurological examination must be made to determine the character of the lesion and its location. It is quite often necessary to repeat the examination a number of times. In addition, a complete physical examination should be made, since the diagnosis of malignancy of the spine may depend upon the existence of primary malignancy elsewhere in the body.

Stereoscopic X-ray pictures always should be made. These pictures will often determine the exact situation, as well as the character of the lesion present. In some instances, in which the lesion level cannot be determined after careful history and exhaustive examination, it may be necessary to inject lipiodol (iodized oil) into the cisterna magna and observe its descent in the spinal subarachnoidal space under the fluoroscope. Its obstruction, whether partial or complete, will indicate the level of the compressing lesion.

Spinal puncture with examination of the fluid obtained is always necessary. In most instances of compression, there are characteristic changes in the pressure of the fluid, measured with a spinal manometer. Also there are changes in the protein and globulin content of the fluid, and many times it is yellow in color. The typical fluid in compression of the cord is of a yellow color, without cell increase, but with increase in globulin and the total protein content. These changes in the cerebrospinal fluid constitute the Froin syndrome.

The Queckenstedt test is of great value in determining the presence of "spinal fluid block." While the needle is in the lumbar sac with the fluid manometer attached the elevation of intracranial pressure by means of compressing the jugular vein normally shows a prompt and rapid rise of fluid in the manometer with a correspondingly prompt and rapid fall when the jugular pressure is released. If the "spinal fluid block" is complete, there will be no response to the jugular compression; if partial, there will be a correspondingly sluggish response. This test, when positive, affords a most valuable indication suggesting exploratory operation in cases of injury to the cord due to fractures and dislocations of the vertebrae.

### LESIONS

Lesions producing spinal cord and spinal nerve root compression may be either inflammatory, traumatic, or neoplastic in nature.

Important lesions in the inflammatory group are pachymeningitis, epidural abscess, chronic arachnoiditis, tuberculous spondylitis, and occasionally osteoarthritis of the spine.

The most frequent traumatic lesions are fractures, dislocations, and gunshot wounds of the spine.

In the neoplastic group are tumors of the vertebra or surrounding tissues, and tumors which originate in the cord, its membranes, or the spinal nerve roots.

In the traumatic cases the compression is produced by fragments of the fractured vertebra, by the distortion in the spinal canal, or by a foreign body, as in cases of gunshot wound. In some instances extradural hemorrhage or hemorrhage into the cord substance with associated edema of the cord may be a contributing factor in the production of compression.

Tumors of the vertebrae usually are malignant metastases from primary growth elsewhere in the body.

Of the benign tumors of the spine, osteoma and chondroma are the types most frequently encountered.

Tumors arising from the spinal nerve root and meninges are neurofibroma and

endothelioma (meningioma) and are benign in character. This group is most favorable for surgical removal.

Tumors within the substance of the cord are less frequent. They are sometimes encapsulated and therefore surgically removable. The most frequent pathological types are glioma, fibroma, sarcoma, tuberculoma, and very rarely hemangioblastoma.

### TREATMENT

The treatment for cord compression is surgical removal of the lesion producing the pressure. In malignancy, the complete removal may not be possible. However, the partial removal usually affords great relief. Often it is followed by disappearance of all evidence of cord compression. Without surgical removal, the lesion advances to the stage of a complete transverse lesion of the cord, and complications destroy the patient. In malignancy, with or without metastasis, the intractable pain may be completely and permanently relieved by cordotomy; that is, by sectioning the "pain tracts" on the anterolateral aspect of the cord above the level of the lesion. Motor function is not interfered with by this procedure.

The results of surgical removal of the tumors of the spinal cord and its membranes are much more satisfactory than those of tumors of the brain. The cord tumor produces signs and symptoms relatively early. They are more frequently benign, more often encapsulated, and more accessible than intracranial tumors, and for these reasons their surgical removal is often followed by brilliant results, even in the patient who apparently is a hopeless cripple. However, it should be emphasized that the degree of recovery following an operation depends very largely upon the duration of the compression. It is therefore of the utmost importance that the diagnosis be made at the earliest possible moment.

The following case abstracts are presented to show several types of lesions which were found to be causing cord compression.

#### CASE NO. 1

##### A CASE OF PATHOLOGICAL DISLOCATION

J. W., negro, male, age thirty. Admitted

September 9, 1931. Onset of illness, five months previously. Began with pain in the back of neck and occipital region, associated with stiffness of the neck. Two months later developed motor weakness in the left arm and leg, which has progressed to almost complete paralysis. No history of injury could be elicited.

Examination revealed irregular and unequal pupils, rigidity and tenderness of the neck. Definite motor weakness of the upper and lower extremities, decidedly more marked on the left. There was some atrophy of muscles of the left arm, and the associated sensory disturbances were particularly marked in the left arm. Superficial reflexes hyperactive with bilateral patellar and ankle clonus. Abdominal reflexes absent. Spinal fluid, normal pressure, clear, cell count eight, and Wassermann anticomplementary. Blood Wassermann positive.

X-rays revealed anterior dislocation of the atlas on the axis with rotation to the left. Also evidence of osteitis of the atlas.

Operation October 6, 1931. Laminectomy was done with removal of the arches of the atlas and axis and an incision into the dura for exploration. An indentation on the surface of the cord was observed as shown in the drawing, figure I. This indentation was



Figure No. 1—Case Number One—Compression myelitis from pathological dislocation of atlas on axis.



produced by the arch of the dislocated atlas. There was marked improvement in cord function in two weeks. The patient could walk without assistance. He was given anti-syphilitic treatment. Improvement continued. At present, eighteen months after operation, there is little evidence of cord damage. However, definite limitation of motion in the upper cervical region persists.

COMMENT: This case represents an unusual type of spinal cord compression due to the spontaneous pathological dislocation of a vertebra resulting from the syphilitic destruction of bone.

### CASE NO. 2

#### CERVICAL FRACTURE DISLOCATION

M. G., white, male, age nineteen. Admitted November 9, 1932. Referred by Dr. E. M. Fuqua, Pulaski, Tennessee.

Three days previously he received an injury while playing football, which resulted in complete motor and sensory paralysis below the level of the fifth cervical segment of the cord, with associated loss of bladder and rectal control.

On admission to the hospital, the patient exhibited some evidence of sensory function below the level of the lesion. All deep and superficial reflexes were absent. X-rays revealed a fracture of the body of the fifth cervical vertebra with anterior dislocation.

Operation and a laminectomy of the third, fourth and fifth cervicals were done. The fourth cervical lamina was fractured. The dura was quite tense and only showed slight pulsation.

Incision into the dura revealed an enlarged edematous cord which entirely filled the intradural space. The cord tended to bulge through the dural incision. There was little evidence of cord contusion. The dura was left unsutured for decompression effect.

The patient immediately showed definite improvement in motor and sensory function. When discharged three weeks later, he was able to lift his legs, to turn himself in bed, and showed definite improvement in sensation and bladder control.

COMMENT: This case illustrates the value of a simple decompressive laminectomy

in a selected group of cases due to injury, in which pressure is caused by the *edema* of the cord.

### CASE NO. 3

#### DORSAL OSTEOCHONDROMA

T. D., white, male, age twenty-six. Admitted May 21, 1928. Referred by Dr. R. W. Billington. Onset ten months previously with pain and numbness in the left knee. One month later the right knee became similarly affected. Both legs became progressively weak, and the anesthesia progressed. Finally there was complete loss of motion in the legs.

On admission, a neurological examination revealed a lesion at the level of the sixth dorsal segment of the cord with complete motor and sensory paralysis below this level, associated with loss of bladder and rectal control.

X-rays revealed a tumor involving the body of the fifth dorsal vertebra and fifth rib. Laminectomy May 24, 1928, with removal of the third, fourth and fifth dorsal laminae, exposing a white nodular tumor of firm consistency, about eight cm. in diameter, invading the spinal canal with com-

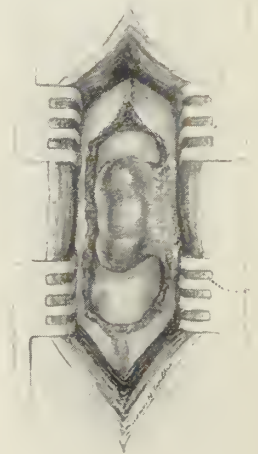


Figure No. 2, Case Number Three—Cord compression by chondroma of fifth dorsal vertebra and fifth rib.

pression of the cord as shown in drawing, figure II.

The tumor was removed. Pathological report, osteochondroma.

Rapid improvement followed. Five weeks later walked with assistance, eight months later walked with cane, and at present, five years after operation, uses cane, and gait is somewhat spastic.

Recent X-ray pictures show recurrence of the extraspinal portion of the tumor. There is no evidence of return of the intraspinal portion.

COMMENT: These tumors are slow growing and relatively benign. However, recurrence is not uncommon.

#### CASE NO. 4

##### CERVICAL CHONDROMA

A. K., white, male, age seventeen. Admitted March 30, 1931. Referred by Dr. Jack Witherspoon. Onset six months previously evidenced by a catch in the right elbow associated with pain and progressive weakness in the right arm. On admission to the hospital the right arm was almost completely paralyzed as to both motor and sensory function. Associated bladder and rectal incontinence of two weeks' duration.

X-ray pictures revealed destruction of the transverse and articular processes of the sixth cervical vertebra.

Laminectomy April 1, 1931, disclosed a firm tumor five cm. in diameter, which had eroded the right one-half of the fifth cervical lamina and projected backward underneath the spinal muscles. The tumor was quite firm and of a bluish red color, and separated from the surrounding muscles and the dura with ease. The intraspinal portion was pressing the cord, producing an indentation. Discharge two weeks later showed marked improvement in both motor and sensory function with return of bladder and rectal control. Three months later no evidence of cord damage could be elicited.

Pathological report, chondroma.

COMMENT: These relatively benign tumors are of frequent occurrence in the spinal column, having their origin from the vertebrae or the intervertebral disks.

#### CASE NO. 5

##### DORSAL CHORDOMA

N. C. G., white, male, age sixty, married, no children, presented himself March 11, 1927. Referred by Dr. A. W. Harris. Onset three years previously as pain in left hip and spine. Pain had been continuous and both legs had become progressively weak with associated numbness and tingling. For one month both legs had been completely paralyzed.

Neurological examination indicated a lesion at the level of the tenth dorsal segment. There was tenderness of the eleventh dorsal vertebra.

Laminectomy, ten days later, with removal of the tenth, eleventh and twelfth dorsal laminae, revealed an extensive tumor extending underneath the spinal muscles to the left and eroding into the spinal canal, producing direct compression of the cord. The tumor was pinkish gray color, soft, friable consistency, with a fairly well defined capsule.

The patient made rapid improvement, was able to walk with assistance at the end of three weeks. At the end of two months, walked with a cane.

Pathological report, chordoma.

COMMENT: This quite rare type of tumor is usually of slow growth, but malignant in character. They have their origin from the remains of the notochord which are situated in the center of the intervertebral disks. Their usual site of occurrence being at the upper or lower end of the vertebral column. Only two other cases occurring in the dorsal region have been recorded in the literature.

In this case the tumor recurred, producing radiating pains, but no compression of the cord. Two subsequent operations were done for the removal of the recurrence. The first operation for recurrence was done three years later, and the second fifteen months following. Patient died of complications.

This case will be reported in more detail elsewhere.



## CASE NO. 6

## DORSAL OSTEOCHONDROMA IN SPINAL CANAL

P. H., white, male, age sixty four. Admitted July 20, 1932. Referred by Dr. O. N. Bryan. Onset eighteen months previously with weakness and numbness in both legs, which had grown progressively worse until the patient, on admission, was unable to move his legs. There was associated marked constipation, but he had not lost bladder control.

Neurological examination revealed weakness in both lower extremities with marked disturbance of sensation below the waist. The sensory level was not clear-cut, and lipiodal injection was done. This revealed obstruction at the ninth dorsal vertebra.

Laminectomy, eighth, ninth, and tenth dorsals, disclosed a firm, white, bony tumor, arising from the junction of the lamina and body of the ninth dorsal on the left, producing cord compression. The tumor was removed and the patient made rapid recovery. On leaving the hospital four weeks later, the patient was able to walk a short distance without assistance. Ten months later, gait was practically normal.

Pathological report, osteochondroma.

COMMENT: These tumors are relatively benign, although occasionally recurrence appears.

Prognosis, good.

## CASE NO. 7

## DORSAL POTT'S DISEASE

C. W., negro, girl, age ten. Admitted January 6, 1926. Onset five months previously as difficulty in walking. Progressed to complete paralysis of the lower extremities, with loss of bladder and rectal control. X-ray pictures and neurological examination revealed evidence of Pott's disease of the fourth dorsal vertebra, producing complete transverse myelitis. Patient was placed on a Bradford frame for three weeks without any improvement.

Laminectomy, February 8, 1926, with removal of the third, fourth, and fifth dorsal laminae disclosed angulation of cord, due to tuberculous granuloma situated on the

left and anteriorly within the spinal canal. The granuloma was removed.

Patient showed slight improvement at discharge two weeks later. Follow-up data have not been available.

COMMENT: This lesion explains the occasional failure encountered by orthopedists when hyperextension alone is used in the treatment of Pott's disease with associated compression myelitis. Any case in which there is no improvement after a few weeks should have the benefit of exploratory laminectomy.

## CASE NO. 8

## DORSAL EPIDURAL ABSCESS

T. C., white, male, age twenty. Admitted November 5, 1931. Patient had fallen from horse two weeks previously, receiving injury to his back. Five days before admission he had quit working because of pain between his shoulder blades. The following day abdominal cramping appeared. The evening before admission his legs felt weak and cold, and the following morning his legs and thighs were numb. About noon he had no sensation below the umbilicus. Had passed no urine in twenty-four hours; had been incontinent of feces.

Examination: Temperature 99, pulse 100, respiration 20. Definite rigidity of the neck with complete flaccid paralysis of the lower extremities. Absence of all reflexes from the umbilicus downward. Upper extremities normal. WBC 17,800. Spinal fluid clear, thirty-one cells, mostly polyps. Globulin positive. Sugar sixty-three. Blood and spinal fluid Wassermann negative. X-rays of the spine negative. The paralysis and anesthesia progressed upward until four days after admission had reached the level of the second and third dorsal segments of the cord. At this time blood culture showed staphylococcus aureus. Temperature fluctuated from 99 to 105.

Died sixteen days after admission. No operation was done.

Post-mortem showed epidural abscess of the fifth to eighth dorsals, also acute osteomyelitis fifth rib and fifth dorsal vertebra. The cord showed suppurative myelitis. This

case represents a relatively infrequent type of compression myelitis. Possibly it was a mistake not to have explored for abscess in the early stage. However, the ascending motor and sensory paralysis did not become stationary before a positive blood culture was obtained.

#### CASE NO. 9

##### DORSAL MENINGIOMA

Mrs. B. M., white, female, age thirty-five. Admitted August 22, 1930. Referred by Dr. Bryce Runyon, Clarksville, Tenn., and Dr. Perry Bromberg, Nashville, Tenn. Onset eight years previously with pain in the left hip. She was treated for repeated attacks of sciatica. During the previous year had associated weakness and numbness in the legs, more marked in the left. Two weeks before admission she had an attack of pain, and numbness involving both legs, following which she was unable to walk.

Examination revealed marked weakness

and sensory disturbances with loss of bladder control. The sensory level was not clear-cut. Lipiodal injection indicated the obstruction at the tenth dorsal vertebra. Exploration at this level was done with removal of the tumor, as shown in the drawing, figure III. Patient left the hospital two weeks later. Could walk with assistance one month later, and had regained bladder control. Four months later resumed her work teaching school, where she had to climb many steps.

Pathological diagnosis, endothelioma (meningioma).

COMMENT: These tumors have their origin from the dura and are slow growing, relatively benign, and recurrence is infrequent. It will be noted that this patient had pain in the left leg for eight years before admission, which was regarded as sciatica. Prognosis, good.

#### CASE NO. 10

##### NEUROFIBROMATOSIS

C. W., white, male, age twenty-three. Onset twenty years previously with appearance of numerous tender lumps in the axilla and median border of the arms and legs. Both legs have been swollen for past several years.

Biopsy indicated multiple neurofibromatosis.

Examination revealed extensive involvement of the peripheral nerves which were studded with hundreds of tender nodular tumors, apparently attached to the peripheral nerves. Neurological examination revealed evidence of cord compression at the level of the third dorsal segment. Legs were markedly weak and spastic, and sensation was markedly disturbed. Lipiodal injection tended to verify the presence of an obstructive lesion at the third to fifth dorsal segments.

Laminectomy, with removal of the third, fourth, fifth and sixth laminae revealed small white tumors growing on the posterior roots of the third, fourth, fifth and sixth dorsals. These nodules were excised. The patient was relieved somewhat of the pain about the upper chest. At discharge, two weeks later, no definite improvement of cord function was noted.



Figure No. 3—Case Number Nine—Dorsal spinal meningioma.



Pathological diagnosis, neurofibromata.

COMMENT: This is a typical case of Von Rechenhausen's disease, with spinal cord compression from the third cervical downward. Failure to improve following operation was probably due to the existence of numerous other nodules on nerve roots compressing the cord at lower levels.

Prognosis, poor.

#### CASE 11

##### INTRAMEDULLARY HEMANGIOBLASTOMA DORSAL CORD

E. M., white, girl, age eight and one-half years. Admitted March 11, 1933. Referred by Dr. W. D. Haggard, Nashville, Tenn. Onset four years previously. Parents first noticed awkward, wobbling gait. Three years later she began to complain of pain in the lower lumbar region, which was worse at night. During the past three months the pain had become quite severe and the difficulty in walking much more marked. She had complained of numbness and tingling in both feet. During the past week had not been able to walk at all, and had lost control of the bladder and bowels.

Examination revealed complete flaccid paralysis of both extremities, with loss of all reflexes. There was a band of hyperesthesia about the level of the eleventh dorsal segment. Spinal puncture revealed a yellow fluid, cell count six, with increase in globulin.

The diagnosis of spinal cord tumor at the level of the twelfth dorsal segment was made.

The morning of operation, March 14, 1933, lipiodal injection confirmed the level of obstruction. Under the same anesthesia laminectomy of the tenth, eleventh, and twelfth dorsals exposed the spindle-shaped enlargement of the cord. A median incision into the cord five cm. in length disclosed an intramedullary tumor of deep red color, friable consistency, which was fairly easily enucleated. The tumor tended to bulge through the incision, as shown in drawing, figure IV. At present, one month following operation, the patient shows some evidence of return of sensory function.

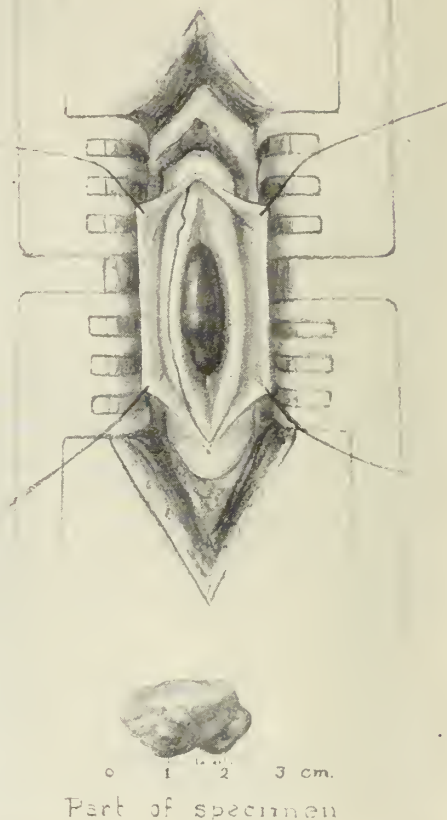


Figure No. 4—Case Number Eleven—Hemangioblastoma of the spinal cord intramedullary tenth and eleventh dorsal.

Pathological diagnosis was hemangioblastoma (angiosarcoma).

COMMENT: This type of tumor occurring in the spinal cord is extremely rare. According to Cushing, only four or five authentic cases appear in the literature. Little is known as to their malignant tendency. Radium was used post-operatively. Such tumors occur more frequently in the cerebellum, and are regarded as benign tumors that are capable of rapid increase in size. This case presents a typical picture of the clinical course of an intramedullary cord tumor, having produced disturbance in gait three years before appearance of pain, which is in marked contrast to the usual onset of extramedullary tumors, in which pain usually is the earliest sign.

This case will be reported in more detail for publication elsewhere.

## ANALGESIAS IN PREGNANCY\*

W. B. ANDERSON, M.D., Nashville

LABOR pains in normal labor are natural, normal, and physiological, as much so as the periodicity feature of them. The character of these pains is the greatest subjective index we have of the progress of labor. While it is our privilege and duty to mitigate the suffering incumbent with childbirth, we must not forget that in so doing we may not only obscure symptoms of labor's progress but also take upon ourselves an additional responsibility, which, if overlooked, is apt to result in disaster. There is not a drug mentioned in the category of analgesics and anesthetics which does not carry with it a penalty which must be borne in mind when administered to a woman in labor.

From time immemorial, efforts have been made to assuage the pains of childbirth. Narcotics and sedatives have been used in various ways to promote this result.

There is no doubt in the minds of experienced observers that the routine administration of narcotics in labor as demanded by hysterical magazine writers and as practiced by some over-enthusiastic obstetricians, has resulted in the loss of many babies at birth.

On the other hand, there is undisputed ground for the use of narcotic agents to mitigate the suffering of women in labor. A woman deserves to have her labor made painless in so far as this can be achieved with safety for herself and her baby. No doctor is a finished obstetrician until he has acquainted himself with some of the analgesics now available. However, no normal woman, after nine months of pregnancy, would permit anything done to prevent her suffering if she knew it endangered the life of her baby.

The object of this paper is to bring out some of the comparative results of the more recent analgesics now on the market.

Twilight sleep is a name given to a state of amnesia brought about by repeated doses of morphine and scopolamine. It was introduced in obstetrics about 1902. It was short-lived because so many asphyxiated babies resulted from its use. It took a heavy toll of babies while it lasted.

Morphine and scopolamine are still given with good results in the first stage of labor, but not with the idea of producing so-called *twilight sleep*. They should never be given until labor is established or within three hours of delivery.

If given in average doses (1/6 grain of morphine and 1/200 or 1/300 grain of scopolamine), their action is more uniform and probably more reliable to relieve dys-tocia than any of the analgesics that have been introduced in obstetrics. The chief objection to their use is narcosis of the baby, which nearly always follows, if given late in labor. Nitrous oxide is one of the oldest inhalant analgesics used in obstetrics (1). In 1880, it was used with oxygen to alleviate pain in labor. It is a splendid analgesic in the latter part of the first and the second stages of labor and may be continued through the second stage if the need still exists. But none of these agencies produces the desired relaxation. When full relaxation is desired, one has to resort to other measures, such as ether, and chloroform.

The objection to nitrous oxide and oxygen is its cost, the cumbersome apparatus required for its administration, the inconvenience of transportation, and the fact that a trained anesthetist is required to administer it. Some patients require more than others, and if kept up for several hours, it has a bad effect on the liver (2).

Rectal anesthesia is not new (3). As early as the first century A.D. wine, made from certain plants, was given per rectum to alleviate pain. In 1847, four years after Crawford W. Long discovered ether anesthesia, it was given per rectum with good results as an anesthetic, but discontinued

\*Read before the Tennessee State Medical Association, Nashville, April 11, 12, 13, 1933.



because of its irritating effect. Later on vaporized ether was administered per rectum. In 1913, James T. Gwathmey conceived the idea of ether in oil per rectum, with good results.

In 1924 he introduced it in obstetrics with the following formula, which he termed a synergistic analgesia:

Ether, ounces .....	2½
Quinine, gr. ....	20
Alcohol, m. ....	40
Olive oil or mineral oil, q.s. ounces	4

This formula gained popularity in many countries because of its simplicity and the ease of its administration. It is used along with other narcotics and sedatives such as morphine, morphine and scopolamine, or magnesium sulphate, or some of the barbiturates (4). A favorite mode of administration with some obstetricians is to add one of the barbituric acid preparations to the Gwathmey formula or give the barbiturate early in labor, to be followed with Gwathmey's rectal anesthesia. This, I think, is the safest of all the analgesics given in obstetrics. There are few objections to it, and with the exception of colitis and diabetes there are no contraindications to its use.

If there is known idiosyncrasy to quinine, it should be omitted from the formula. Alcohol is used to dissolve the quinine, and may be withheld if quinine is omitted. The purpose in using quinine is to stimulate uterine contractions, and may be supplemented with pituitrin, given hypodermatically in two or three minim doses.

The analgesic effect of the Gwathmey method is fairly certain in 90 per cent of patients. The anesthesia is not deep, but the patient relaxes. If followed with inhalation anesthesia, much less of the agent is required. There is little, if any, nausea to follow. Labor is not prolonged, but frequently by relaxing a rigid cervix the time of delivery is actually shortened. The incidence of forceps delivery is not increased.

Pernocton, barbital, avertin, sodium amytal, nembutal, dial, etc., belong to the synthetic group of barbituric acid preparations. They are popular sedatives, given

orally, intravenously, intramuscularly and per rectum, for their analgesic effect upon the woman in labor. Intravenously their effect is quick and powerful. Except to control convulsions in eclampsia I prefer giving them orally. However, my observations have been limited to sodium amytal and dial. Obstetricians have their favorites in this group. Some obstetricians favor avertin, while others of the same city severely condemn it. And the same may be said of the other barbiturates.

Their effect is uncertain. At times they cause extreme restlessness. Some patients become so excited they have to be restrained in bed. However, with the majority of patients, given a moderate dose, the effect is ideal. The dose varies with the individual, some patients requiring larger doses than others.

The effects of the barbiturates upon the baby has received wide attention in obstetric literature of recent date. Shir and Daichman think they have a positive narcotic effect on the baby, and state that instrumental deliveries have increased with the use of sodium amytal.

In the Lying-In Hospital of Chicago, etheline has been a popular analgesic. It has been very satisfactory, and was given throughout the course of labor, beginning about the last of the first stage.

Like nitrous oxide, it required one skilled in anesthesia to get the best results. It is suitable for hospital work only, for the same reasons that nitrous oxide is.

From their reports, it seems that infiltration anesthesia has taken the place of etheline in the above mentioned hospital. Most of their operative obstetrics, Cesareans, forceps deliveries, etc., and many normal deliveries are done with local infiltration anesthesia. Because of local infection and other accidents, I believe it is only fit for hospital work or with a trained staff.

There have been too many deaths reported from spinal anesthesia to call it a safe procedure to control pain in labor. However, in a Jersey City hospital where over four thousand babies were born last year, spinal anesthesia was used routinely in all operative obstetrics without a death

from the anesthetic. However, it is only suited to hospital work.

To summarize:

1. I repeat, it is our duty to mitigate the suffering incumbent with childbirth as far as safety permits.

2. Because of a few good results from a given analgesic, we are apt to become over-enthusiastic and apply it routinely.

3. Because of idiosyncrasies and pathologic entities, there is no safe routine to follow in analgesias in obstetrics.

4. There is no analgesic, when pushed to the extent of complete relief from pain, or perfect analgesia that will not sometimes prolong labor or to some extent narcotize the baby.

5. I think it is better to stake one's reputation upon safety of mother and baby rather than upon painless labor.

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#### DISCUSSION

DR. L. J. CALDWELL (Nashville): Dr. Anderson's paper carries a very conservative, sane view of the situation: that the average modern woman in childbirth not only wants but demands analgesics is beyond question, and that the doctors are also partly responsible for this is also beyond question. Whether this is from compassion, sympathy, or the lure of increased business, or all, is immaterial. We know that some men have built a large practice in obstetrics upon the widely disseminated news that they do not permit their patients to suffer the pangs of childbirth—painless childbirth, either with Gwathmey's rectal analgesia, morphine and scopolamine, sodium amytal, various nerve-blocking injections, spinal, sacral, rectal, local, nitrous oxide and oxygen, or some other form of analgesia or anesthesia.

To quote from Emerson L. Stone in his book, "The Newborn Infant," he says: "The employment of various types of analgesias increases operative procedures and increases fetal mortality and morbidity." I would go him one better by adding that they also increase what is of greater importance, maternal mortality and morbidity.

While I use some of the popular, present-day analgesics, I feel sure that if the majority of present-day drugs and methods of analgesia and anesthesia had never been used in obstetrics there

would have been thousands of babies saved whose lives were sacrificed to these agents, and much maternal morbidity prevented which was a result of operative procedures necessitated by the drugs interfering with normal functions.

The longer we do obstetrical work the greater respect we have for non-interference, conservatism both as to the use of drugs and as to operative interference. In the management of cases that will permit of conservative management at all, the least analgesia or anesthesia that can be used the better the condition of the mother and infant after delivery.

The biblical injunction, "In sorrow shalt thou bring forth," must have some bearing on the question, as we do know when too much narcosis is indulged in we not infrequently get some unpleasant sequelae in mother or baby. In reality a judicious suppression of the extensive use of analgesia in obstetrics would be more humane, more scientific, and, to use an Amos and Andy expression, leave a better imprint on posterity.

#### DISCUSSION

DR. W. T. PRIDE (Memphis): I did not get in to hear all of Dr. Anderson's paper, but I made a special effort to do so.

First, with reference to the discussion of the doctor preceding me, am rather surprised when anyone does not advocate analgesia. Wish every doctor could have one baby; if so, he would believe in analgesia. As a matter of fact, analgesia does not retard, but hastens labor, if you give the right kind.

I got in in time to hear Dr. Anderson discuss Gwathmey's analgesia. In 1924, I started Gwathmey's analgesia. It was very satisfactory except for one or two things, and one of them I am sure Dr. Anderson did not mention. He said that Gwathmey's was safe and it did not produce much disturbance. One thing he failed to say, and that is if you give this to a patient who has nausea and vomiting caused by ether, from some previous operation, and give it to her per rectum, you will have on your hands a vomiting case and a labor case at the same time. It is most distressing. Vomiting and hard labor are not boon companions. Of course, you can stop that by giving a hypodermic, but sometimes this is not desirable within a certain length of time, and you would not care to aggravate the condition. That was my objection to Gwathmey's after using it. Also, if it isn't given properly (and very few nurses know how to give it), it is an irritant to the rectum, they expel it, and the odor is very disagreeable.

Every patient is a law unto herself. You will find that in everything that you do with the human being; but, barring that, if you want the nicest results that you ever had, with no harm whatever to the patient or the baby, try the method I will give subsequently.

I have given it 1,000 times in private practice, and we have never in all of that time restrained a



patient, nor has any nurse complained that a patient was restless. I grant you that there are certain patients that will be restless if you give it to them. For instance, a doctor at Stuttgart, Arkansas, told me that he gave it to a negro and it took four of them to hold her. You can imagine what happened; she felt the peculiar "floating away" coming on her and didn't know what it was that was easing her. She got scared, and naturally was nervous and irritable and wanted to get up and run away; but that was ignorance. Explain to your patient what is going to happen; use some psychology, and you will never experience the restlessness in the better class of patients.

It is as follows:

Give six or nine grains of sodium amytal per rectum (we give six), and then within the hour give her a hypodermic of 1/6 gr. of morphine and 1/200 of scopolamine, and then if she is restless in a short period of time and complaining of pain, give her three grains of sodium amytal by mouth, and you will have the nicest analgesia you ever saw. We have given as much as sixteen grains, with no effect whatever on the baby.

As I came into the room I heard Dr. Anderson say if you give the scopolamine and morphine within three hours you will not have any anesthesia in the baby. That is true. We always said an hour and a half. That is too long before the time of delivery; they come out and get pretty restless before you want to give them ether or chloroform, or whatever you are using, and especially gas. Greenhill told me, and read a paper to that effect, that you could give the morphine within a half hour of the time and it would have no effect on the baby.

I said, "I thought that would be fatal, sure; the morphine is just beginning to have good effect in thirty minutes."

He said, "You will find it is true." So since then we have watched when we had to give morphine within thirty minutes of the delivery, and sure enough we have had about fifteen cases in which this has happened, without any effect on the baby whatever. That was news to me, and I still am trying it out.

The analgesia shortens labor, and is at the same time amnesic, the patient doesn't remember. She complains and says she is having terrible pains, but does not remember. One patient said, "Doctor, can't you do anything about these pains?"

I said, "Why, I'm sitting here watching you and you're snoring between your pains."

She said, "I'm not talking about between the pains, I'm talking about the pains." But after it was over she didn't remember that she had a pain, although she talked about it a great deal.

In one instance a man came by at eight o'clock in the morning to see his wife after the baby was born at ten o'clock the night before. We had given her medical induction. She said to her husband, "Do you think they are going to give me that medicine again?"

He said, "What are you talking about?"

"Medicine to make my baby come."

"Why," he said, "you had your baby at ten o'clock last night."

She said, "Why, I haven't had any pains yet."

Occurrences similar to that happen frequently.

Sodium amytal and morphine and scopolamine used together have never produced any ill results, and we feel that they have saved lots of nervous wreckages which come on after many childbirths.

## DISCUSSION

DR. M. S. LEWIS (Nashville): I was particularly gratified to hear that Dr. Pride is enthusiastic about the use of sodium amytal in obstetrics. In my opinion it is one of the simplest and safest forms of analgesia you can use. My first experience was with its use intravenously; since then I have used it in a large number of cases by both the oral and intravenous routes, and I am still of the opinion that the intravenous route is the most intelligent way of controlling the dosage, and prefer to use it by this route.

In the oral administration of amytal, an initial dose of six grains repeated every two hours until the desired effect is obtained has given the best results. The average dose by the oral route is usually from fifteen to eighteen grains, but one may give as much as thirty grains without any deleterious effect on either the mother or baby. It may be combined with morphine grains 1/6 or scopolamine 1/150, as desired.

In regard to using amytal intravenously within an hour before delivery. Since we resuscitate all our babies with carbon dioxide and oxygen routinely to prevent any atelectasis, we have not had any difficulty with our babies. This brings up the question of using morphine and scopolamine within a few hours before birth. We have all been taught that morphine and scopolamine have a deleterious effect on the baby if used a few hours before birth. During the past few years, to our great surprise, we have found this to be untrue. I have used as many as ten injections of morphine and scopolamine in the course of a fourteen-hour labor without any effect on the baby.

I firmly believe that analgesia in obstetrics shortens labor; especially is this true in the management of the occipito-posterior positions. I have entirely changed my technique of handling this condition since using amytal analgesia, and do not interfere as often as I previously did. Amytal, no doubt, permits the cervix to dilate more readily without extreme pain, and thereby does not stampede the doctor into a radical procedure. Of course, occasionally you will have a posterior position that will be difficult, but the average posterior position will not give you any more difficulty than a normal case if you allow them plenty of time, and this is possible under amytal analgesia.

## DISCUSSION

DR. P. C. SCHREIER (Memphis): The statement is made that it is characteristic of modern

women to demand relief during labor. While true, that is not wholly true, because it is just as ancient as history itself that women have demanded relief in labor, and from my reading of the history of obstetrics and contact with immigrant people in my school days in Philadelphia, it occurred to me that the earliest analgesia in obstetrics was whiskey, or alcohol in some form. I imagine that careful perusal of the history of obstetrics would reveal that some form of intoxicant has been used throughout time by women during labor. We may not want to use that method today. We regard ourselves as being more scientific in the use of more accurate doses of other drugs, but the point is that it is ancient as well as modern demand to expect analgesia in labor.

Ideal analgesia in labor is only possible, I think, in hospital practice. We can approach it to a certain degree in home practice, but ideal analgesia requires constant attention and constant attendance, either by the doctor or by a trained nurse. We may not always expect the ideal, and therefore home obstetrics can be handled in such a way as to give the patient at least partial relief from her suffering.

Furthermore, ideal analgesia is best carried out in primiparas in whom we are most concerned, because fortunately multiparas do not have so many hours of labor to face nor such intense pains, although it is right and we practice giving relief to the multipara, but with modified technic because we are anticipating a shorter labor.

Primiparas are those to whom I wish to devote the remarks in regard to the technic I have employed, which is solely the use of morphine and hyoscine. In my training we used to use the tablets. Recently some of the drug manufacturers have come out with an ampule preparation of hyoscine. The one I use is an ampule of 1/130 grain, which seems to be a purer form of the drug, less toxic than the other form.

It is our routine to do this: When the primipara has reached the stage of labor where the cervix is dilated two fingers and is thinned out, we give 1/6 of morphine and 1/130 of hyoscine. The hyoscine is repeated in 45 minutes. The patient is then, in almost 100 per cent of cases, quite analgesic. However, some do not become completely analgesic and you can never make them completely analgesic, particularly if they have been accustomed to taking a number of highballs. Thereafter, at forty-five-minute intervals, succeeding doses of hyoscine are given. The third dose is usually one-half of an ampule, 1/260 of a grain, and succeeding doses are graduated downward. As a rule, the fourth, fifth, or sixth doses, if I want to give six or seven doses, are usually one-third of an ampule, five minims, and if I happen to give five minims fifteen minutes before the baby is born, I see no ill effects. Once having attained a level of analgesia, however, it can be maintained very satisfactorily with five-minim doses of this ampule preparation of hyoscine.

Dr. Pride likes sodium amytal. His experience has been more extensive with sodium amytal; mine has been more extensive with morphine and hyoscine. He cites the case of a patient who didn't know she had the baby the night before. I recall a case just last week where the patient came to the hospital at 12:00 o'clock midnight and looked at her wrist watch. The analgesia was started. When she woke up on the table the next day and the nurse said she had a nice little girl, she glanced at the clock and said, "Why, it's only twenty-five minutes after twelve. Can I feel my stomach?"

"Yes," said the nurse.

"That can't be," she said. "It has been only twenty-five minutes."

She had had complete analgesia and complete amnesia.

#### DISCUSSION

DR. SAM COWAN (Nashville): The perfect analgesic has not yet been found as attested by the many methods, all of which are good, all of which should be used by the man who is most skillful in the use of that particular kind of analgesia. There is none of them that is absolutely safe, and when the analgesia is started with the patient I think that she demands not only the attention of the nurse, but she demands to a considerable degree the attention of her physician.

I have used sodium amytal. I have not used it intravenously, but I have used it orally, I have used it rectally, and I have used it in connection with the scopolamine and morphine. I am frank to say that I don't get as good results as Dr. Pride. I may not use it as well as Dr. Pride does. My technic is not as good, possibly.

As to scopolamine, I think all of us have come to the conclusion that it is not nearly so dangerous for the mother and the baby as we were formerly taught. When I was a medical student we were told that to give morphine or scopolamine to the woman in labor not only would retard labor, but we were very likely to asphyxiate the baby. We have all seen patients, particularly multiparas, but I have seen primiparas do the same thing, who with the cervix two fingers dilated, if given a hypodermic of morphine and scopolamine, would get full dilatation and deliver the baby in forty-five minutes. I have seen that repeatedly, particularly in multiparous women.

I take somewhat the position of Dr. Hirst in Philadelphia. I believe that colonic ether is too good to give up entirely. There are certain cases where colonic ether does more good than any other anesthetic or analgesic that you can give. I was glad to hear Dr. Lewis make his statement about the posterior position. In the giving of almost any type of analgesia you will relax the cervix and the posterior position, outside of being possibly a little bit longer, will be nothing more than a normal labor. Practically all of the analgesics that we use in labor have to be supplemented by some inhalation anesthetic at the time of the birth



of the baby, if we want to keep our patients as free from pain as we can.

There is one statement that Dr. Anderson made which I wish to warn against, and that is the giving of pituitrin to supplement the quinine while the patient is in labor. Pituitrin, before the cervix is fully dilated or in abnormal position, or if there is any disproportion in the presenting part in the pelvis, is a dangerous drug to use, and I don't think pituitrin ever should be used in labor until the head is on the perineum.

#### DISCUSSION

DR. W. B. ANDERSON (closing): If I were to have a baby I wouldn't want one better than Dr. Pride to deliver me, and I don't blame the women for running after the obstetrician who gives analgesics; you can't blame them. But it is up to the obstetrician to select the particular analgesic for that particular case, to individualize, as Dr. DeLee says. Also, it is up to the obstetrician to have guts enough to give the analgesic when needed and to refuse it when it is contraindicated.

I tried to stay away from my own ideas in my paper as much as I could, and to quote only extracts from some of the more recent literature on obstetrics.

The synergistic analgesia of Gwathmey, as I said in my paper, is the safest analgesic known, and as the word implies, it is to be given with

other sedatives. It is a poor analgesic by itself. Very few patients will retain it unless some other sedative has gone before it, and I prefer sodium amytal to start with. You can give sodium amytal earlier in labor than any of the sedatives or analgesics. You can repeat the Gwathmey formula as late as you care to in obstetrics without fearing its effect upon the baby.

Personally, I have not seen any narcosis in the baby as a result of sodium amytal, but there is ample literature on the subject from good authority that it does give some narcosis to the baby. Narcosis in the baby is a peculiar thing. You will find some babies narcotized without any analgesia, and I have seen as high as a grain of morphine given to a woman in labor in eclampsia, with very little effect upon the baby; yet morphine gives more narcosis to the baby than any of the analgesics we know of.

As to scopolamine, I don't know. There are so many idiosyncrasies to scopolamine and I have seen such very ugly effects upon the mother from a medium dose of scopolamine that it makes me a little bit careful about giving it.

In answer to Dr. Cowan's remarks, I will say, everyone today knows that pituitrin should not be given until you have a complete dilatation of the cervix. In one, two, and three minim doses, it is perfectly legitimate to give it in the second stage of labor where the uterus shows some atony.

## THE PROBLEM OF HEART DISEASE\*

C. SIDNEY BURWELL, M.D.,\*\* Nashville

**H** EART DISEASE is now the most frequent cause of death in the United States. Recent reports show that about one death in five, or over two hundred and fifty thousand deaths per year, may be ascribed to this cause. Disease of the heart thus constitutes a major problem for the medical profession.

Physicians have looked at the problem of heart disease from many points of view. Early concepts of heart disease were based on anatomical observations, and they emphasized valvular abnormality and cardiac hypertrophy. Such concepts of heart disease offered little basis for therapy, and it was partly a desire to evolve effective treatment and partly advance in physiological knowledge which turned attention to disturbances in the function of the heart. These disturbances in the function of the heart include the arrhythmias, angina pectoris, and congestive heart failure.

Recent advances in knowledge of anatomical and physiological abnormalities of the heart have been brilliant and valuable, but their very brilliance and value may blind our eyes to the fact that they tell us nothing about the main problem—the ultimate causation of the disease. Control of almost any disease demands a knowledge of the nature of the disease process. Recently the growth of the idea of the prevention of disease has tended to turn our attention away from the immediate and obvious effects of heart disease and to focus it upon the disease processes which cause disorders of the heart.

Heart disease may then be considered from structural, functional, and etiological viewpoints. I propose to discuss the prevention and treatment of heart disease from these points of view, preceding this dis-

cussion by certain observations upon the natural history and causes of heart disease.

The diagnosis "heart disease" does not convey an idea of the nature of the disease process because the underlying etiology varies, and is not infrequently multiple. The etiological factors, however, diverse as they are, have certain similarities in their effects upon the heart.

First, they injure the essential muscle of the heart pump directly, and second (and chiefly), they work their evil by imposing upon the heart muscle continuous and in the long run insupportable overwork. They impose their burden mainly by causing conditions such as valvular disease or increased vascular resistance.

The heart, an organ of enormous patience and durability, commonly survives this overwork for years, often for decades, but eventually meets defeat. This final surrender is signaled by a group of signs and symptoms which we designate as heart failure. Heart failure is the usual cause of death in heart disease. The period of overwork and muscular injury which terminates in heart failure may be shortened by progression or recurrence of the original causative factor or by any other influence which injures or overworks the heart muscle.

Since it is not possible, save in the rarest instances, to modify the permanent anatomical changes of heart disease, it is evident that there are two measures which are most likely to prevent or postpone death from heart disease:

1. The relief of heart failure.
2. The prevention or control of the disease processes underlying heart disorders.

1. The relief of congestive failure:

By congestive heart failure is meant a group of signs and symptoms dependent upon congestion in various parts of the body. These symptoms and signs usually include dyspnea (which may be continuous, paroxysmal, or produced by relatively mild

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\*\*From the Department of Medicine of the Vanderbilt University Medical School.



exertion), engorgement of neck veins, distension of the liver, peripheral edema and pulmonary edema; and they often include collections of fluid in serous cavities.

This familiar picture carries with it a heavy sentence (1). Treatment is brilliantly successful, but only temporarily. Drastic limitation of activity, the securing of rest (by any necessary means), digitalis, and diuretics will increase the duration and the quality of life for these patients to a certain degree. Occasionally it is possible to adjust the patient's life to his disease so that he may survive with reasonable comfort for years, but even under the best conditions when a patient has developed the classical evidences of heart failure he is sentenced to death, and the fatal event is seldom long postponed.

The future may conceivably bring new knowledge of the nature of myocardial exhaustion which will make it possible to control heart failure by chemical means. At present, however, such means are not at hand. Our treatment of heart failure is essentially symptomatic and temporary. Such treatment, therefore, cannot be expected to be in any sense a solution of the problem of heart disease.

2. The prevention or control of the disease processes underlying heart disorders:

What can't be cured must be endured—or prevented. Obviously, the way to prevent heart disease is to prevent the conditions that cause it, or, failing that, to control them so successfully that their effects upon the heart are abolished or minimized. The first step in the development of a program of prevention is a knowledge of the etiological factors involved.

The types of disease process underlying heart disease include congenital defect, infections, poisons, dietary deficiencies, and certain processes of whose nature we are ignorant. The relative importance of various etiological factors has been found to vary with geographical location, with race, with climate, and with mode of life.

Studies of large groups of patients with heart disease from the point of view of etiology have been reported from various sections of this country by White and Jones

(9), Wood, Jones and Kimbrough (11), Davison and Thoroughman (3), Coffen (2), Stone and Vazant (6), Viko (8), Schwab and Schulze (5), and others. Such studies have a twofold value: they not only add to the accumulated data concerning the etiology of heart disease but they also enable local groups to visualize their particular problems. The study to be reported here was initiated with these two objectives. It was carried out by my colleague, Dr. Clarence L. Laws, and is discussed fully by him (4). The patients studied were those admitted to the hospital and out-patient department of the Vanderbilt University Hospital during the calendar years 1930 and 1931. During this period 16,935 new patients were admitted to the various divisions of the out-patient department and the hospital; 11,198 (66.2 per cent) were whites, and 5,737 (33.8 per cent) were negroes. This ratio closely approximates the racial percentages in the vicinity of Nashville. From these patients were selected all those who exhibited definite objective evidence of heart disease. These patients numbered 645, and each of them showed one or more of the following evidences of cardiac disease:

- Unequivocal cardiac enlargement
- Congestive heart failure
- Mitral stenosis
- Aortic regurgitation
- Congenital abnormality
- Auricular fibrillation
- Auricular flutter
- Heart block (electrocardiographic evidence)
- Coronary occlusion
- Angina pectoris
- Pericarditis (acute or chronic)
- Bacterial endocarditis
- Aneurysm of the aorta

The records of these 645 patients were then subjected to analysis. Measurements of the heart's size were verified by X-ray in 434 (67.4 per cent) of the cases; electrocardiographic tracings were made in 362 (56.2 per cent). One hundred and sixteen of the patients died during the two-year period, and 71 autopsies were obtained. On the basis of all available information, each

patient was classified etiologically, or placed in the "unclassified" group if adequate evidence was lacking. The classification used was that proposed by White and Myers (10). Their classification was modified by consolidating the hypertensive and arteriosclerotic groups, because we found it impossible to separate them accurately.

### INCIDENCE

Table 1 reflects the incidence of organic heart disease among the 16,935 patients admitted. The total incidence of 3.8 per cent is of less significance than the differences in the incidence in the two race groups; 4.9 per cent of the negroes studied had heart disease, but only 3.3 per cent of the whites.

TABLE 1

		<i>Incidence</i>
		<i>%</i>
Total Patients (1930-1931).....	16,935	100
White .....	11,193	66.2
Negro .....	5,737	33.8
Heart Disease, Total Cases....	645	3.8
White .....	365	3.3
Negro .....	280	4.9

### OCCURRENCE OF ETIOLOGICAL TYPES

A summary of the results from the study of this group of 645 patients who had organic heart disease is shown in Table 2

TABLE 2

	<i>White</i>	<i>Negro</i>	<i>Total</i>
Number of Patients.....	365	280	645
Arteriosclerotic-Hypertensive	65.1	71.8	67.9
Rheumatic .....	15.1	4.3	10.5
Syphilitic .....	2.2	15.4	7.9
Congenital .....	4.1	2.1	3.3
Thyrotoxic .....	1.1	1.1	1.1
Subacute Bacterial Endo- carditis .....	2.7	0.4	1.7
Miscellaneous .....	2.7	1.4	2.2
Unclassified .....	3.8	2.1	3.1

These figures indicate that a large proportion (86.3 per cent) of the heart disease observed in the Vanderbilt University Hospital is caused by arteriosclerotic hypertensive disease (67.9 per cent), the rheumatic fever complex (10.5 per cent), and syphilis (7.9 per cent). They also indicate that while heart disease due to arteriosclerosis and hypertension occurs with approximately equal frequency in the white and negro patients, rheumatic heart disease

assumes an importance in the white patients comparable to that of syphilitic heart disease in the negro.

It thus appears that the problem of prevention of heart disease becomes largely the problem of the control of two infectious processes (acute rheumatic fever and syphilis) and of a group of processes of unknown nature which we include under "hypertension" and "vascular disease." Is the control of these processes, in the present state of our knowledge, a goal possible to reach?

Acute rheumatic fever is the primary cause of most of the true heart disease of young people and of 10.5 per cent of all heart disease in our 645 cases. In spite of the accumulation of a great deal of information about the disease, we still have no specific measure by which we can prevent or even cure it. Its cause and mechanism are still in dispute. Salicylates have a favorable effect upon certain manifestations of the rheumatic state but little influence upon the incidence of heart disease. The importance of foci of infection is uncertain and their removal only occasionally helpful either as treatment of the rheumatic state or as a measure to prevent involvement of the heart, and it is probable that *acute* respiratory infections are much more important than chronic foci in promoting attacks of acute rheumatic fever.

Our attack on this disease is thus a highly individual one. We urge improvements in food, environment, and personal hygiene. We try to prevent acute respiratory infections by tonsillectomy, or to minimize their evil effects by conservative treatment (which means going to bed). In the presence of active disease we advise prolonged rest in bed, much as in the case of tuberculosis, or we invoke the apparently favorable influence of a mild and steady climate. Treatment by vaccine should be mentioned here. Its value is still unproved, but it is a development worth watching (7). Much can be accomplished by utilizing these measures judiciously, but in spite of them rheumatic heart disease will continue to occur and to progress.

Heart disease which results from hyper-



tension or arterial disease or both is at once the most frequent and most discouraging variety. When we speak of the prevention of hypertension and vascular disease we are discussing conditions which have not yet been successfully defined and of the cause or causes of which we have almost no effective knowledge. Even to make a list of suggested causes would overflow the hour and rattle many old skeletons. Beliefs about the causes of hypertension tend strongly to be based on faith rather than works. Apparently it is true that part of the response of certain individuals to pain, to uncertain or unpleasant situations, to obesity, and perhaps to other factors is an increase in blood pressure. These factors are then immediate causes of hypertension, but the constitutional defect that makes people react in this way has so far eluded discovery. We do not treat the hypertension, but only the patient.

We have, then, insufficient knowledge on which to base a program for the prevention of hypertensive heart disease. We can endeavor to supply helpful regimes for individual patients, and we can begin to encourage and support in every possible way high-grade research in the problems of hypertension and vascular disease.

Syphilis causes 7.9 per cent of the heart disease in our series, and 15.4 per cent of the heart disease among negroes. Here at last is an enemy against which we have effective weapons. It is true that when cardiovascular syphilis has advanced to the stage when it produces symptoms and is recognizable, then the horse is gone from the stable and no amount of locking the door will replace him. It is equally true, however, that cardiovascular syphilis usually develops in patients with syphilis which has been treated inadequately or not at all, and that in groups of syphilitics whose disease is treated early, vigorously, and long enough, the incidence of heart disease due to syphilis is considerably diminished. The proper treatment of early syphilis, then, is a definite step that should be taken in our attempt to prevent heart disease. This is hardly a problem for the cardiologist, but for the profession at large.

These pessimistic remarks indicate my belief that effective public control of the causes of heart disease is, in the present state of our knowledge, beyond our power. Before we can do battle we must have sharper weapons than we now possess. These will be forged by researchers seeking for knowledge of the basic causes of heart disease. Fortunately for us and our patients, however, there is another point of attack. The interval elapsing between the acquisition of heart disease by the patient, and his development of symptoms which limit his activities and happiness, is not fixed. It may be profoundly influenced by many factors: shortened by neglect and greatly prolonged by wisdom and courage.

The specific influences which accelerate the progression of heart disease are first of all the primary causes of heart disease: acute rheumatic fever, hypertension, arteriosclerosis, syphilis, thyroid disease. In addition to these there is a group which we may call the secondary causes of heart disease. These are rarely the sole cause of true heart disease, but frequently accelerate its progression or increase its severity. They include:

1. Excessive (for the given patient) physical or emotional strain
2. Dietary deficiency
3. Obesity
4. Anemia
5. Acute infections (in general)
6. Pregnancy

The control of these factors is often the most important preventive activity of the physician dealing with heart disease.

The conclusions from all this discussion are, I hope, beginning to appear. My feeling, based upon the facts I have presented, is that at present the prevention of heart disease is a problem concerned with individual patients treated by individual physicians.

Each patient with acute rheumatic fever, with syphilis or with hypertension, is a candidate for heart disease and a cardiac death. Whether he gets heart disease or not may be decided by his treatment. If he gets it, whether he lives ten or forty

years may be determined by our advice and his intelligent acceptance of it.

The object of preventive medicine is improvement in the duration and quality of life. In the field of cardiac disease we can all be successful practitioners of prevention by applying even our present meager knowledge.

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Discussion of this paper will be found following Dr. Wm. E. Bryan's paper; pages 119-124, inclusive.



## NON-VALVULAR HEART DISEASE\*

WM. E. BRYAN, M.D., Chattanooga

THE subject, "Non-Valvular Heart Disease," was chosen for this paper with the idea of contrasting the field attempted with the well-defined and well-understood field of valvular disease of the heart. My effort in this essay will be limited to those conditions directly affecting the integrity of the myocardium. The order in which these conditions will be discussed is as they occur frequently in periods of life, beginning in the early decades.

I. *The myocardium in acute infections.*—The infections most frequently causing involvement of the heart muscle are rheumatic fever, influenza, diphtheria, typhoid, scarlet fever, smallpox, erysipelas, septicemia, pyemia, and malaria. The pathology is caused by the action of the toxins on the heart muscle. The gross pathology produced is that of cloudy swelling. The inflammatory condition may undergo resolution or it may be replaced by scar tissue. The recognition of myocardial involvement is often impossible during the course of the original infection. The degree of involvement may vary from that producing no signs or symptoms to that of heart failure. The likelihood of myocardial involvement should be kept in mind in the course of the above infections and even for weeks afterward. A soft, rapid pulse may be the only sign observed. The apex impulse may be diffuse; the blood pressure may be lower. The patient, as a rule, has a delayed comeback, complaining of a degree of weakness not otherwise accounted for.

In my opinion, here is a fertile field of preventive medicine in which we may work to the end of lowering the embarrassingly high death rate from heart disease later in life. This is particularly true in the case of rheumatic fever, as in very many cases there is heart involvement when the signs and symptoms of rheumatic fever are not

of sufficient degree to require the consulting of a physician by the parents of the child. Much can be done by the profession in educating parents in the matter of danger connected with mild febrile conditions—growing pains and clumsiness on the part of their children—as often these are rheumatic and choreic manifestations and oftentimes the heart becomes involved. Only a few days ago I examined for life insurance a child fourteen (14) years of age, who had a very definite heart involvement, with only a history of extremely doubtful rheumatic infection. The osteopath who had been consulted stated to the parents that the inconvenience suffered was one of posture.

As stated, the parenchymatous inflammation may undergo resolution, or there may be scar tissue formation, thereby forever impairing the efficiency of the heart muscle. By prolonging the rest period a few days or weeks, the damage is repaired, or the damaged muscle is allowed to readjust itself.

II. *The myocardium in hyperthyroidism.*—A large amount of investigation has recently been done, and is being done, in this field. An interesting symposium on the thyroid heart was given at the 1932 meeting of the American Heart Association at New Orleans. The consensus of opinion held that the thyroid heart means a thyroid myocardium. The principal changes in the heart muscle listed by Weller (1), et al., are hypertrophy of the myocardium, hypoplasia of the myocardium, edema, cloudy swelling and fibrosis. The action of specific toxins on the heart muscle is the generally accepted explanation for the heart muscle damage in thyroid disease. However, Rake and McEachern (2) are not inclined to accept this explanation, believing that it is most likely a condition influenced by metabolism, directly or indirectly.

In hyperthyroidism the symptoms which most often cause the patient to consult a

\*Read before the Tennessee State Medical Association, Nashville, April 11, 12, 13, 1933.

physician are those referable to the heart. The predominating symptoms complained of in Burnett and Durbin's (3) 148 cases were dyspnoea, orthopnea, palpitation, tachycardia, swelling of feet and ankles, precordial or substernal pain, heart consciousness, dizziness and cardiac irregularity. The leading signs noted were tachycardia (above 90) 73 per cent, enlarged heart 30 per cent, systolic blood pressure above 160 millimeters 20 per cent, diastolic above 90 millimeters 22 per cent. Arrhythmias were recorded in only 22 per cent. Systolic murmur at the apex or in the pulmonic area 40 per cent, and signs of decompensation occurred in 13 per cent of the cases.

III. *The myocardium in occlusion of the coronary arteries.*—1. Thrombus formation. 2. Embolism. 3. Arteriosclerosis. 4. Syphilitic lesions.

Thrombosis is the most common lesion found in coronary occlusion. The process may be rapid and extensive, or slow and producing little occlusion. This is usually found in combination with degenerative processes of the artery. The intima is thickened, fatty degeneration takes place with the superimposed thrombus. Stewart (4) reported a case in a man of 67 in which autopsy findings proved that thrombosis in different parts of the vessels had been occurring over a period of years.

Occlusion by embolism is said to be rare. The rationale is evident. In extensive reading of the literature on the subject, I failed to find a case report.

Occlusion by arteriosclerotic process is most often combined with that of thrombus formations, as noted above. But, partial occlusion by narrowing of the lumen takes place.

Syphilitic lesions involving the coronary arteries are comparatively rare. G. A. Allen (5) found seven cases of syphilis in 371 autopsies in which the coronary vessels were involved. The lesion is one of the aorta in which extension is about and into the sinus of the vessel. These cases are, as a rule, in young adults.

Thus the blood supply to the myocardium may be disturbed in varying degrees. A moderate grade of localized anemia with

no great damage may be produced by a partial occlusion. Or, complete or nearly complete, cutting off of food and oxygen may take place. A sudden complete occluding produces instant death. An almost complete occlusion, coming about gradually, may produce little or no inconvenience. Osler once said that a patient could get on very comfortably with three-fourths of his coronary circulation out of commission. This accounts for the fact that disturbance in the coronary circulation often goes unsuspected. G. A. Allen (5) found the coronary vessels partly occluded 371 times in 1000 autopsies in which patients died from other causes. In none of these were histories pointing to previous symptoms obtained. In this country, the findings of Willius were very much the same.

The diagnosis of coronary disease is not easy. In this field there is room for improvement among us clinicians. We may hope for some assistance in the more general use of the electrocardiogram. But, I am sure that if we keep the condition in mind and look for it, we will let fewer of them pass us.

The signs and symptoms of an acute, severe attack are very well defined. There is sudden pain, varying in location from upper abdomen, under the sternum, or even in the throat. The pain may be moderate or agonizing. This is not brought on or made more intense by exercise. Nausea and vomiting sometimes occur. Emesis is often produced as patient feels that vomiting will make him feel better. When the pain is in the upper abdomen it is likely to be mistaken for a surgical condition, especially if there are signs of collapse, as there frequently are. In severe cases, there is anxiety in the facies. This pain is not relieved by nitrites.

There is nearly always a fall in blood pressure. Death often intervenes in a short time. If this does not take place, there is a rise in temperature with leucocytosis. A few days later, a pericardial friction rub may be heard. The heart sounds are distant, and various irregularities in the rhythm may develop. Rales in the lungs, signs of engorgement of liver, and other



signs of cardiac failure may occur. We must bear in mind that pain is not always present. I saw one case of collapse with death in less than an hour in which there was no pain. In my experience, the severity of the pain cannot be taken as a criterion as to the prognosis.

Fully half of the recognized cases die in from a few minutes to two weeks. I have had cases who were frequently doing well expire suddenly while lying quietly in bed, eating a meal or reading the paper. Some of the patients who go on living live comfortably for years, others suffer other attacks. One case I have at the present time, more than six months after recognized attack, is comfortable so long as she reclines quietly. But walking a few feet produces palpitation and dyspnoea. Her heart is considerably enlarged. After her attack, there was a fall of more than 40 millimeters in her systolic blood pressure.

There is that large group of heart cases in which there is hypertrophy of the heart muscle. The causes of this are: 1. Hypertension. 2. Chronic pericarditis. 3. Valvular disease. 4. Pernicious anemia and the leukemias.

In this condition, the hypertrophy of the myocardium is strictly a "work" hypertrophy. In the matter of hypertension, it makes no appreciable difference to the heart muscle whether there is arteriosclerosis or nephritis. However, in arteriosclerosis the complicating factor of sclerosis of the coronary vessels must be taken into consideration.

All cases of hypertension which persist for any considerable length of time result in hypertrophy of the heart muscle. The hypertrophy accompanying pericarditis is, of course, due to adhesive bands which throttle down the effort of the heart muscle.

*Valvular diseases.*—The muscle hypertrophies in an attempt to compensate for the lost motion of the narrowed or regurgitating valve opening. This hypertrophy is principally in the chamber of the heart in which the affected valve is located. In anemia and in the leukemias, there is increased work brought about by the heart muscle on account of the lessened efficiency

of the blood, and decreased nourishment oxygen.

At this point, I would like to call attention to the matter of hypertrophy of the heart as the result of bodily work. Evidence is lacking to support the idea that bodily effort, such as unusual work or sports, can bring about appreciable hypertrophy of the heart muscle. Cabot (6) states that in his experience at the Massachusetts General Hospital he has failed to find a case of the so-called "athlete's heart." However, most interesting statistics were furnished last year by an insurance company (7), which has a most excellent statistical department, that the mortality age of athletes was something like one and one-half years less than that of college graduates of ordinary ability. Their age of death was about three years less than that of honor graduates.

You will see from the above that in the conditions involving the heart muscle there are a great variety of degrees of involvement. The physical signs presented are likewise varying in degree, from no signs or symptoms to that of heart failure and death. The principal point of interest is the matter of whether the individual can carry on his usual occupation and pursuit of happiness.

From an insurance standpoint, early recognition of these conditions is of great importance, and careful history and the tests for the efficiency of the heart are the principal means of detecting these conditions early. Cabot (8) states that it is impossible to determine cardiac enlargement without the use of the X-ray. The location of the apex impulse gives us a very good idea as to the size of the heart. However, other factors must be taken into consideration, such as size of individual and conformity of the chest. The reaction of the heart to exercise, such as running upstairs, or 30 to 50 hops, is of great assistance in determining the efficiency of the heart muscle.

The electrocardiograph is of considerable assistance in recognizing deficiency of the heart muscle. However, I would like to remind you that too much importance must

not be attached to a single negative electrocardiograph.

In conclusion, I would like to emphasize the fact that heart muscle disease covers 80 per cent of the field of heart disease. This class of cases is of concern to all of us. The integrity of the myocardium is the staff on which we lean in our crises.

#### Affecting the Myocardium:

- I. Acute infections.
  - Rheumatic fever, influenza, diphtheria, etc.
- II. Hyperthyroidism.
- III. Occlusion of the coronary arteries:
  - (1) Thrombus formation.
  - (2) Embolism.
  - (3) Arteriosclerosis.
  - (4) Syphilitic lesions.
- IV. Work hypertrophy:
  - (1) Hypertension.
  - (2) Chronic pericarditis.
  - (3) Valvular disease.
  - (4) Pernicious anemia and the leukemias.

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#### DISCUSSION

DR. J. O. MANIER (Nashville): Mr. Chairman and Gentlemen: To discuss the problem of heart disease in five minutes can hardly be done, so I wish merely to make reference to one or two thoughts. The extreme prevalence of heart disease and the mortality from heart disease unquestionably will have the tendency, as time goes on, to make us all more and more heart-minded, and should do so. In that connection, however, I think we should bear this thought in mind and not allow the pendulum to swing too far, so that we should have certain definite criteria set up in our minds as to what constitutes heart disease.

Dr. Burwell, in his reported cases, set up such criteria. One is very much struck with this in the valvular defects that he mentioned, that only mitral stenosis and aortic regurgitation were mentioned. There was no mention of mitral regurgitation as an instance of heart disease. I think this can very logically be said on that particular point, that where one finds a purely isolated mitral systolic murmur, particularly in a young individual, without other objective evidences of heart disease and without very definite facts in the past history of that individual which logically could cause heart disease, one is not at all entitled to brand that

individual as a cardiac individual. Much damage can be done to the mental aspect of people by leading them to believe that they have heart disease, which to them means not only ultimate but very prompt death.

So far as the problem of heart disease is concerned, it revolves, as the paper stated, largely around the question of prevention on the one hand and management of the established condition on the other. There is not so much that we can do in prevention, and yet there are certain things that it is well worth while to bear in mind. I want to agree entirely with Dr. Burwell about this. In so far as rheumatic heart disease is concerned, I am entirely a convert to the fact that upper respiratory infections have far more to do with it than the so-called foci that we have believed in in the past. I think the thing that we should do with upper respiratory infections, even in the individual who has the uninvolved heart, and a thing in which we have defaulted in the past, is to make that individual convalesce properly. You have all had the upper respiratory infections and you all know when you first get up how you are not only weak in your voluntary muscles, but the least movement tends to accelerate your heart rate, and unquestionably, whether or not actual disease is produced at that time, an upper respiratory infection takes something in the way of reserve out of the heart. It is a very difficult thing to get people to convalesce properly. We have a hard enough time to make them stay in bed for twenty-four hours of normal temperature, but that is not the ideal so far as prevention is concerned.

Prevention of syphilitic heart disease is a possibility. There are many factors, however, that arise to prevent one from carrying that out. Were all syphilitics ideally treated, there is a very grave doubt whether any great number of them would ever develop heart disease. Much, as has been stated in the paper, can be done with syphilitic heart disease after it has developed and before heart failure develops if proper treatment is carried on.

There is one small percentage of heart disease that can and should be largely prevented, and that is the thyroid heart. If proper study of patients were made and the realization that here in this district, though we are not in the goiter belt, we have more hyperthyroidism than we recognize, many of these could be prevented.

So far as the management of heart disease prior to the time of failure is concerned, there are one or two things that to me are quite striking in which I think at different times as a profession we have rather offended common sense. One of those which I feel very strongly about myself is in connection with the hypertensive arteriosclerotic type of heart disease. The idea of hoping to secure any results in the actual disease process itself by the removal of focal infections, tonsils particularly, I mean in elderly people, and teeth to a less degree, is perfectly futile. It may be that in properly



selected instances these foci should come out, but to apply it as a general rule not only does not in practically any instance affect the trend of the arterial condition or the hypertensive state, but at the same time often creates sufficient shock to destroy what little reserve that individual has left in his circulation.

I think one other factor in connection with hypertensive disease particularly which should be alluded to is the too rigid restriction of diet. The idea of putting an individual, simply because he has a hypertension without, we will say, renal disturbance, on practically a protein-free diet is one of the most fallacious things in the world. That individual needs his minimal amount of protein to maintain his nutrition just as well as those of us who may be in good health.

People who have heart disease, as set out in the paper, should be maintained in a proper state of nutrition, but certainly should not be allowed to become obese, because that reflects itself very badly back upon the individual and his condition.

I think we can do a good deal in the problem of heart disease if we bear some of these things in mind. It is true, as Dr. Burwell has stated, that our knowledge at the present time is not adequate to allow us, in the sense that we would like to use the word, literally to prevent all forms of heart disease. Certain of them can be prevented; many of those who develop heart disease can be carried on largely to their expectancy if they are properly handled.

#### DISCUSSION

DR. W. S. LEATHERS (Nashville): Mr. Chairman and Gentlemen: I have been very much interested in both of these papers. I was comforted by a remark that Dr. Manier made; he said it was impossible to discuss the preventive aspects or any aspects of heart disease in five minutes. This is obvious.

Heart disease is the outstanding problem in contemporary preventive medicine. Emphasis has been placed upon the great mortality from this cause and its apparent increase within recent years. This fact seems to be substantiated by the increase in mortality from heart disease compared with the total mortality from all causes. There is also an increase in the death rate from this disease as compared with the total death rate from infectious diseases, particularly pulmonary tuberculosis, and from nephritis, degenerative diseases of the nervous system, and cancer.

Interest in the prevention of heart disease has been stimulated by our experience with tuberculosis and with other infectious diseases. It was thought, if aggressive attention were given to heart disease as had been done in connection with the control of tuberculosis since 1904, that possibly similar results could be obtained. With this conception in mind, the American Heart Association was organized in 1924. The studies initiated by this Association and the investigations carried on by research workers in this important field

have shown the limitations, imposed by a lack of knowledge, in the prevention and treatment of cardiac disease.

Dr. Burwell calls attention to the fact that heart disease is not infrequently due to more than one etiological moment. The fact that there are frequently several etiological factors involved makes the problem much more comprehensive and difficult than would be found in an effort to control an infectious disease, such as tuberculosis, which is the result of a specific cause. Moreover, our knowledge in many respects is deficient concerning the whole question of heart disease. The statistical information, broadly speaking, is insufficient and rather inaccurate concerning mortality, and particularly morbidity. Much of the statistical data which are available have not been carefully analyzed. In other words, the problem of heart disease is in need of more careful study and investigation. This is being done, and there is every reason to believe that our knowledge will be extended with reference to this problem in a reasonable time.

As has been stated, heart disease represents at present the major cause of death in the United States. It may be of interest to give briefly information concerning deaths from heart disease in Tennessee as compared with the mortality from this cause in the United States registration area. Available data show that in 1917 the death rate per 100,000 people in the registration area was, in round figures, 172, while in 1929 it was 211. In Tennessee in 1917 the total death rate was 107, while in 1929 it was 135 per 100,000 people. It is also of interest to note that in 1917 the death rate from heart disease among whites was approximately 90, and among negroes 175 per 100,000. In 1929, the death rate among whites from heart disease was 115, as compared with 227 among negroes per 100,000. Obviously, as has been shown by the analysis of cases, the relative death rate of negroes and whites shows a much more serious condition among negroes. The difference in incidence of syphilis in the negro race is doubtless an important factor in causing the high rate in this population group.

It is estimated that there are about 2,000,000 cases of organic heart disease in the United States, and the annual quota of deaths from this cause is approximately 200,000. Present conditions point to the fact that one in every five of the population living at the age of ten will eventually succumb to heart disease. A child at ten years of age is now three times as likely to die from heart disease as from tuberculosis. The possibility of dying from heart disease at the age of thirty-five is, among males, about four times that from tuberculosis, and among females it is nearly six times that from tuberculosis. These data emphasize the problem from the standpoint of incidence or morbidity.

The marked increase, however, in mortality and morbidity from heart disease may be in a measure

due to more accurate diagnosis at present as compared with many years ago. There is also better reporting of deaths. Special studies have likewise revealed information concerning incidence which formerly was not available. Then, too, there has been a decided reduction in the death rate among children, especially during the early age period, as a result of the decrease of infectious diseases because of improved methods of public health administration and more skillful treatment in medical practice. These, together with other factors, have undoubtedly increased the number of individuals who reach the age period of forty and over, the period during which the mortality from heart disease is greatest. In other words, the reduction of the death rate from infectious diseases prior to the age of forty will permit a larger proportion of individuals to survive to the age period of forty and over. According to the law of compensation, if this age redistribution takes place, the number of deaths which occur during the age period forty years and over will gradually increase somewhat proportionate to the decrease in the deaths which occur below forty years of age. Therefore, the conditions which are operative as causes of death above forty years of age, such as heart disease, nephritis, cancer and the degenerative diseases of the nervous system, will slowly become responsible for an increasingly greater number of deaths. The individual, however, will have a better chance of living through what may be termed the normal or productive period of life.

The discussion to which you have listened does not offer very much encouragement concerning the relief of heart failure. This significant statement is made: "But even under the present conditions, when a patient has developed the classical evidences of heart failure, he is sentenced to death, and the fatal event is seldom long postponed." It has been rather carefully determined that the average length of life of one who has heart disease is about ten years. Of course, the classical case lives a much shorter period, possibly two years. The contribution which the physician can make at this point is the readjustment of the habits and mode of living of the individual. It is possible in this way to postpone the final outcome by the consistent application of hygienic measures, such as proper diet, freedom from worry, less work, and especially longer rest periods. In other words, the individual's life is to be pitched on a more uniform basis and be devoid of the usual stress.

The statistical data concerning the special study of patients in the Vanderbilt Hospital out-patient service during the calendar years 1930 and 1931 are of much interest to me because it is evident that the application of preventive measures is of tremendous importance in dealing with the cardiac problem. Of the 645 cases which were subjected to analysis, the records show that 116 died during the two-year period. Seventy-one autopsies were obtained. It is a significant fact that "in only one case was the pre-mortem diagnosis of etiology

altered by the post-mortem examination." The patients were classified either etiologically or placed in an unclassified group. I think that studies of this kind will prove invaluable in more accurately determining the approach which should be made in achieving a reasonable solution of this problem.

In view of our present knowledge concerning the heart and blood vessels, it does not seem that much can be done in the prevention of the hypertensive and arteriosclerotic types of cardiovascular disease. It appears that the prevention of heart disease is at present largely dependent upon what may be done to prevent and successfully treat the infectious types resulting especially from acute rheumatic fever and syphilis. One of the most encouraging facts concerning acute rheumatic fever is the fact that it appears to be closely related to the occurrence of acute respiratory infections. Unfortunately, our knowledge concerning the etiology and methods of treating acute rheumatic fever is very unsatisfactory, and there is, therefore, need for a better understanding of this problem in an attack upon heart disease as a result of this infection. The early diagnosis and thorough treatment of syphilis is the fundamental principle in dealing with this question in its relation to the prevention of heart disease. It is extremely difficult to consistently apply this principle in actual practice, but statistics show that progress is being made in the prevention of this disease, particularly in its neurological forms.

In concluding these comments, I wish to briefly emphasize the importance of the periodic health examination made in a careful way as a means of preventing heart disease. This should be applied not only among people of forty years of age and over, but also from infancy throughout life. One of the beneficial results accruing from periodic physical examinations of pre-school and school children is the educational value of such work in relation to adult life. If children are impressed with the necessity of these examinations they will be more likely to seek the advice of physicians more regularly later in life.

The integration of preventive and curative medicine is of the greatest importance in dealing with this and other problems in improving medical service, and I hope that it may be possible to more effectively mobilize the medical profession in the preventive as well as the curative aspects of medicine.

Dr. Burwell's paper is fundamentally sound and presents facts which are of much interest and value in dealing with the problem of heart disease.

#### DISCUSSION

DR. O. S. WARR (Memphis): These two excellent papers have left very little for one to discuss. I was especially interested in the statistics that Dr. Burwell presented. Just recently I have been going over some statistics, comparing the types of heart disease which we see



in private practice with those we see in hospital practice. In a review of approximately 900 cases seen in private practice during the past ten years, we have found a rather interesting contrast with those of 1500 cases observed during the same period at the Memphis General Hospital.

Classified according to the etiology, we find that rheumatic heart disease is responsible for almost all acquired heart disease during the first and second decades of life, representing 28 per cent of the entire group seen in private practice; whereas, in the hospital group, only nine per cent was classified as rheumatic. Syphilis is the principal cause of heart disease occurring during the third and fourth decades, representing 4 per cent in the private group; while in the hospital group it constitutes 23 per cent. This wide difference in the incidence of cardiovascular syphilis is explained by the fact that in our hospital practically two-thirds of all the patients are negroes.

The third group, namely, the hypertensive and arteriosclerotic group, represented 60 per cent of the private cases, and 62 per cent of the hospital group. Dr. Burwell has so well covered the subject of prevention of heart disease that nothing more can be added except by way of emphasis. The general practitioner, and especially those dealing with children, should remember that rheumatic heart disease is almost always seen during the first or second decades of life; therefore, great care should be exercised in dealing with rheumatic fever, and allied diseases, even when they occur in the mildest form.

I have been convinced for a long time that rheumatic heart disease is less frequently observed in the South than we generally believe. It is true that rheumatic fever is relatively infrequent in the sense that it is recognized in the East.

I am convinced that there are a great many cases of rheumatic heart disease in which there is no history of rheumatic fever, and no history of joint symptoms. More rarely there is a history of chorea, whereas a history of tonsillitis is usually indefinite in the majority of these cases. In other words, it would seem that rheumatic heart disease is in itself a primary condition.

Although rheumatic fever is not ordinarily classed as a communicable disease, the frequency with which it is encountered would justify isolation of a child with rheumatic fever, at least during the acute period.

Regarding the luetic group, as Dr. Burwell has so well said, theoretically we should be able to prevent cardiovascular syphilis, and doubtless we could if these patients could be compelled to take adequate treatment. Every doctor who attempts to treat syphilis should recognize the fact that every case, regardless of the state, is potentially a case of cardiovascular syphilis, and if not adequately treated, will eventually show clinical evidence of cardiovascular involvement.

Dr. Bryan limited his discussion to the non-valvular types of heart disease, which is included

in Dr. Burwell's last group and which he classified as the hypertensive arteriosclerotic group. It is this group which is largely responsible for the increasing death rate of heart disease, and unfortunately in the light of our present knowledge of these two underlying conditions, very little if anything can be done to prevent them. Heredity plays the principal role, and since we cannot choose our ancestors, we cannot hope to accomplish much in the prevention of this type of heart disease.

In conclusion, I would like again to emphasize the extreme importance of making a clear distinction between heart disease and heart failure. There are many patients with definite heart disease who do not need treatment. Merely because a patient happens to have a valvular heart disease is no indication for treatment.

Just last week a patient was brought into the hospital who had been put to bed for three months because of a so-called leaking heart. He had never had symptoms suggestive of heart failure, and had consulted his home physician because of an occasional attack of palpitation. On discovery of the "leaking heart" the patient was put to bed and kept there. Examination revealed that he did have a systolic murmur, but no other physical signs of heart disease, and as stated already, no suggestion of congestive failure. This patient happened to be a nervous, apprehensive type of individual, and it will doubtless take another three months to convince him that he does not have heart disease.

#### DISCUSSION

DR. W. R. CATE (Nashville): Mr. Chairman and Gentlemen: I am impressed with the scope of the papers that have been presented on heart disease this morning. The knowledge and the facts that have been presented to us have been so comprehensive that it is difficult for one to grasp them in their true light and fully understand the meaning of the information that has been brought to us.

There is one phase of the heart problem which has not been touched on in either paper nor in the discussion, which to one who is interested in the heart problem is a very real problem, and one that is met with frequently from day to day, that is the patient who comes in or is sent in with a questionable diagnosis of heart disease, the question for decision being: Is this a case of heart disease, or is it not? In other words, we have this large group that might be embraced under the title of the irritable heart, of the neurocirculatory asthenia or the fatigue syndrome, problems that one has to meet in dealing with heart cases—real problems that put the greatest responsibility on the examiner. The patients who have a full-blown heart disease or heart syndrome do not offer us the problem in diagnosis that this group of cases offers.

We had this problem several days ago in a patient with a large multiple adenoma of the thyroid. She had been told six years ago that she had a thyroid heart and should have an operation,

otherwise she would have heart failure later in life. At this time she had a rate of 140. It dropped sometimes to 130, and yet she had a minus 10 basal metabolism rate. She was rather irritable. The question came up as to whether or not this patient should have an operation for the adenoma. The doctor raised the question whether or not she actually had heart trouble. This was a real problem. The fact that she had a minus 10 rate does not mean that the condition of the heart was not in part due to the disturbed thyroid condition, but there was the problem as to whether or not there was any myocardial condition which would prevent an operation.

This patient was put to bed and the rate, after she had been in bed a few days, was found to be 80; when she was sitting up her heart rate would immediately go up to 110.

This is the type of person we are meeting more or less frequently, who, under stress, evidences some shortness of breath, the rate going up to 120, quite above the increase which should come on with moderate activity. That is an increasing group of cases. I think when we face the question of the heart problem there is a great responsibility that rests on the man who is making the examination, first to determine whether or not we are actually dealing with a heart condition, or whether there is no heart condition present. If you determine there is no organic condition there, either valvular or muscular, that still does not dismiss the patient as a cardiac problem, because he may constitute the most difficult cardiac problem from then on, even more than if there were actual heart pathology present. Here comes in the relationship of the doctor with the patient, to explain the palpitation the patient has experienced, the irregularity on exercise, shortness of breath, to emphasize that they are not indicative of heart conditions. Over a period of months, maybe years, it is possible to do a great deal for this type of patient simply by taking time, not once, but probably on numerous occasions, to explain the symptoms that are present, and therefore allay the fears that are in the minds of these patients, because the fears are oftentimes the basic problem with which we have to deal.

It is only recently that a young child needed a double herniotomy and the physician refused operation because of the marked irregularity of the pulse which was noted, and he notified the parents that the child had some form of heart condition. As a matter of fact, the child had nothing but the ordinary respiratory arrhythmia that was exaggerated. This idea of heart disease had been implanted in the minds of the parents and of the child.

I think we have a problem to know when we are dealing with so-called heart neuroses and when there is an actual basis for the fear that has been engendered. Many of the cases of the cardiac neurosis group may eventually be placed over into the actual organic group. There has been a reve-

lation in the past two years in a case that was thought to be functional who has developed a definite aortic regurgitation. At times we may have to switch a case from one group to another, but this is really a cardiac problem that should receive our profound consideration, because a great deal can be done for this group of patients.

#### DISCUSSION

DR. C. SIDNEY BURWELL (closing): I cannot possibly comment on all the points raised by this very provocative series of discussions. I want first to congratulate Dr. Bryan on his very sound paper and to reemphasize two points on which he has already placed emphasis. The first is that no mechanical device will substitute for a carefully, thoughtfully taken history and a precisely done physical examination in arriving at the estimation of the anatomy and physiology of the heart we are studying. The second is the extraordinary frequency with which disease of the coronaries has been shown to be a cause of sudden death and of certain forms of more chronic heart disease. As a cause of sudden death I should think it easily leads the field.

Not long ago I talked to Dr. Wearn of Cleveland, who has been studying coronary disease for many years, and who has been collecting cases of sudden death, and he gave me the alarming information that he had been able to find five cases in which sudden coronary occlusion had occurred with fatal results while the patient was holding a royal flush and before he had a chance to play it.

We left mitral regurgitation out of our evidences of presence of heart disease for exactly the reasons which Dr. Manier indicated. Mitral regurgitation is, I think, a most difficult diagnosis to make, and we think if a systolic mitral murmur is really indicative of heart disease it will be accompanied by other evidences among those which we mention. I agree with him completely as to the importance of convalescence from all sorts of acute infections. We overdo our treatment of hypertension not infrequently. I have seen two cases of dietary edema due to too rigid restriction of protein in hypertension cases.

The value of the periodic health examination depends on the use which is made of it. I agree with Dr. Leathers that it has a very definite place in the prevention of the progress of heart disease in individual patients. It takes a good doctor to use the periodic health examination correctly. Correctly used, I am sure it is useful.

I am enormously interested in Dr. Warr's figures. I believe that analysis of them on a racial basis will bring his figures and my figures much more closely together than they apparently are. I am glad to have our impression of the relative frequency of rheumatic fever confirmed in this way.

Dr. Cate's problem about the diagnosis of the presence of heart disease is a problem which is difficult to meet. The only thing I can pause to



say about that is this: I believe that by and large it is better to err on the side of making too few diagnoses of heart disease rather than too many. There is one group to which I would not apply this rule, the group of children with acute rheumatic fever; these we almost have to consider as probable cases of heart disease until we can prove that they are not.

#### DISCUSSION

DR. W. E. BRYAN (closing): I wish to begin by stating my appreciation of Dr. Burwell's paper and also the discussion that has been given on these two papers. I feel that in the discussion the field has been pretty well covered. However, I should like to emphasize one thing, and that is the concept of hypertension. What is hypertension? What is it trying to do? What is it all about? I think if we recognize the fact that hypertension is most likely a compensatory matter, that it is nature trying to do something that something has got to be done about. Consequently, in lowering the blood pressure in hypertension, we have accomplished very little, if anything, and probably done harm. So, as has already been

mentioned by Dr. Manier, in the handling of these hypertensive cases I think there is one thing that he did not emphasize quite sufficiently, and that is these cases of extreme hypertension where, by changing a man's method of living, his occupation, you can prolong his life for a considerable period of time. Of course, if he is the type of individual who wants to die with his boots on, there is not anything that can be done about it, but if he wants to live as long as he can and he has accumulated means that he wants to enjoy, if you relieve him of certain of his responsibilities and have him follow a different method of life you probably can prolong his life for a considerable length of time.

I think that the profession in general, as has already been suggested, overdoes the question of dieting in hypertension. In addition to the doctor's cases of edema caused by restriction of diet, I saw a case that I felt sure was a pellagrin caused by the patient's being put on a restricted protein diet for hypertension. Personally I believe I would rather have hypertension than pellagra.

I again wish to say that I enjoyed Dr. Burwell's paper and appreciated the discussions.

## THE JOURNAL

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H. H. SHOULDERS, M.D., Editor and Secretary

APRIL, 1934

## EDITORIAL

### MEDICAL SERVICES IN ISOLATED COMMUNITIES

The proponents of socialized medicine try at times to justify the complete communization of medicine by the conditions which exist in sparsely settled isolated communities.

There are sparsely settled communities without adequate medical services. In these same communities there are no facilities for communication, for education, or for religious services. The facts are that as communities they have few or none of the improvements or conveniences which constitute a part of a modern community.

It is, therefore, proper to raise the question as to whether or not it would be better to move the few people who live in such communities out into communities where modern conveniences already exist rather than tax the people into bankruptcy in order to take modern civilization to the people who prefer isolated communities.

Certainly it would be cheaper to move them out than it would be to take civilization into them because if we put doctors into the communities they must be maintained and must continue to be maintained at public expense on and on unless the community is capable of supporting itself in addition to paying for the services.

If the natural resources of the community are such that this cannot be done, or if the people are indisposed to develop their resources, it still would mean that the state will maintain their roads, their schools, their churches and their medical care.

Many of the people who live in these sparsely settled sections prefer their isolation, with its associated inconveniences and privations. They would rather do without some of the services we regard as necessary and enjoy their isolation with its freedom rather than become cramped and unhappy, as they sometimes do in the tenement quarters of a modern city.

In our opinion, these people constitute the smallest problem that confronts America today. They are not talking about revolutions. The fact is the congested centers constitute the biggest problem that exists. The problem is to get people to live together in peace and harmony.

The mortality and morbidity rates in these remote sections is not such as to cause alarm. The tenement sections of our large cities, in spite of modern hospitals and modern health departments, have a higher morbidity and mortality rate.

There are health-giving qualities in the very life these people lead. They are not worn out and exhausted by arduous tasks performed in unhygienic surroundings. They get the full benefits of the health-giving qualities of the sunshine—and sunshine is a wonderful disinfectant. The body resistance of these people is kept at a pretty high level. Contagions are least likely to become widespread among them because of their isolation. In the main these people are not begging for sympathy. It seems there is a sort of reckless squandering of human sympathy and money on them which might well be spent in improving the habits, the lives, the diet and the work of some intellectuals in congested centers who try to find a problem in the remote section when it actually exists at their own doorstep.

### OUR THANKS TO THE CHATTANOOGA TIMES

The Chattanooga *Times* ran the following editorial under date of March 23, 1934. By the kind permission of the *Times* it is reproduced:

### MEDICAL PROFESSION AND DEPRESSION

When Tennessee doctors assemble in Chattanooga for the annual convention of the Tennessee State Medical Association, April 9 to 12, they will



not come as a class who have profited by the depression. Members of the medical profession, like the members of other classes, have been hard hit. Charity practice has increased enormously, and collections from those expected to pay have slowed down and in countless instances amounted to nothing.

Many members of the medical profession have, no doubt, found the going rather difficult financially since 1930. There has been practice, but little or very slow pay. For some reason it seems to be the disposition of many people, if not most, to put off paying their doctors until everybody else has been paid. In the meantime, the physician gets along as best he can.

In his efforts to keep the business side of his life on an even keel, he finds himself in a very different position from that occupied by the merchant, the lawyer, or those engaged in other branches of service. The merchant can refuse to sell on credit to one who is known to be a bad risk; but the doctor cannot refuse to answer a call for help because the caller has no credit, without getting a reputation which no physician desires. The lawyer may refuse to take a case unless paid a fee in advance, but the nature of the doctor's service is such that it would be inhuman for him to do so. The garage man may hold a car for the cost of repairs, but the doctor cannot hold his patient until he is paid.

Wherever there is need for medical or surgical attention, there the doctor may be found, administering to human need. His presence often spells the difference between life and death. Should not he receive in the matter of promptness of compensation fully as much consideration as the butcher, the baker, and the candlestick maker?

In this editorial the *Times* has expressed truths and sentiments which doctors themselves could not express. It is one of the few expressions that have appeared in the lay press of the United States since this terrible depression began—which shows an insight into the problems doctors have faced and a knowledge of the attitude doctors have displayed toward the problems.

We have been remunerated by fees occasionally. In most instances the fees were markedly reduced. In a larger number of instances we have been remunerated for services by expressions of gratitude only. In a fairly large number of instances we have received neither fees nor expressions of gratitude. Still we doctors are ready to fight on for our professional ideals which are synonymous with the best interest of the public.

We are grateful to the Chattanooga *Times* for this excellent editorial.

## DEATHS

Mr. E. Mead Johnson, of Evansville, Indiana, president of Mead Johnson & Company, died March 20, 1934.

## RESOLUTIONS

Whereas, an all wise Providence has taken from our midst a trusted brother and coworker and beloved past president, Dr. E. White Patton, and,

Whereas, he was a man of such sterling character as to win the utmost respect and affection of us all through his untiring efforts to uphold the ideals of our profession and encourage a closer cooperation between the different branches of this profession, never forgetting the deep responsibility of the doctor to his patient, and,

Whereas, we deeply appreciate his work and example, his splendid professional ability and his sacrifice in promoting a home for the Chattanooga profession.

Be it therefore resolved, That we, the Chattanooga and Hamilton County Medical Society, deeply deplore the passing of Dr. Patton from among us; that we can best honor his memory by endeavoring to emulate his noble example.

And be it further resolved, That we extend to his bereaved family our sincere sympathy and condolence, and be it further

Resolved, That a copy of this preamble and these resolutions be sent to the family of the deceased, a copy spread upon our Record Book, and a copy sent the secretary of the State Medical Society.

D. N. WILLIAMS, Chm.,  
J. W. BRADLEY,  
J. B. MCGHEE,  
A. F. EBERT,  
Z. T. BROOKS,  
*Memorial Committee.*

Approved March 22, 1934.

FRANKLIN B. BOGART, *President.*  
WM. J. SHERIDAN, *Secretary.*

## RESOLUTIONS ON THE DEATH OF DR. GEORGE D. BUTLER

The Giles County Medical Society, at a called meeting for the purpose of paying tribute and respect to the memory of Dr. George D. Butler, who died at the home of his daughter, Mrs. George White, on January 16, 1934, appointed the undersigned committee to prepare suitable resolutions as a testimony of high esteem, respect and honor in which he was held by the members of this society, and by the medical fraternity of the State.

Dr. Butler was born at Aspen Hill in 1856. He attended the public schools of this county, and later attended University of Louisville Medical College, graduating in 1876. After graduation, he returned to Aspen Hill, where he practiced for a few years. Later, he moved to Pulaski, forming a partnership with the late Dr. W. E. Wilson, where he continued in practice until 1931, when he was forced to retire on account of failing health.

He was ever ready to respond to the call of those needing his professional services, always giving his best efforts to alleviate pain and suffering, making no distinction in patients or services rendered, with regard to circumstance or ability to pay. To his profession, he was ever loyal and ethical in his dealing with his brother physician. He was possessed of quality of heart and mind which go to make up the wise physician and Christian gentleman, and his whole professional life was spent in bringing relief to the sick, and hope to the dying; a high and noble calling.

He had been a member of the Giles County Medical Society since 1876, and was a member of the State Medical Association, and also a member of the State Board of Medical Examiners for eight years.

Whereas, his usefulness as a medical man and a fellow of this society is recognized and appreciated for its true worth, and,

Whereas, we, the members, are grieved at his loss, and are sensitive of the loss of the community and the profession of this State;

Therefore, be it resolved, That this So-

ciety pay this tribute to his memory by adopting these resolutions and recording them in our Minute Book, sending a copy to the family and publishing in the county papers, and sending a copy to the State Medical Journal.

Signed,

THE GILES COUNTY MEDICAL SOCIETY.

JAS. K. BLACKBURN,  
G. C. GRIMES,  
E. M. FUQUA,  
*Committee.*

## WOMAN'S AUXILIARY

*President*-----Mrs. W. O. Floyd, Nashville  
*President-Elect*----Mrs. Willis Campbell, Memphis  
*Press and Publicity* -----  
-----Mrs. W. W. Wilkerson, Jr., Nashville

At the time this goes to press we still have the thrill of the State Convention before us, but by the time of publication it will be a realized fact. We feel that we express the sentiment of the entire Auxiliary when we say we are extremely grateful to Mrs. W. O. Floyd for her successful, efficient, and kindly administration which is drawing to a close. Thank you, Mrs. Floyd, for your splendid leadership.

Full details of the Convention will appear in the May issue of the JOURNAL.

Welcome to our new Auxiliary.

We are pleased to announce the organization of the Woman's Auxiliary to McMinn County Medical Society. The officers are: president, Mrs. W. E. Foree, of Athens, Tenn.; secretary, Mrs. Roy Epperson; chairman of hygiene, Mrs. W. R. Arrants. The other members of the Auxiliary include Mrs. C. O. Foree and Mrs. McCleary.

## REPORTS OF OTHER LOCAL AUXILIARIES

Shelby County—Mrs. Percy Toombs, President.

Mrs. Percy Toombs assumed the presidency at the February meeting, held at the University of Tennessee. At that meeting Dr. Willis Campbell gave a very interesting talk on Crippled Children in Tennessee. The meeting was followed by a luncheon at



the University. The March meeting took place on the third Wednesday, at which time plans were made for a spring card party, a bridge luncheon, to be held April 4th at the Nineteenth Century Club. To date 500 tickets—one dollar per ticket—have been sold. Delegates for the State Convention are: Mrs. W. T. Black, Mrs. E. C. Mitchell, and Mrs. R. E. Flack. A membership drive has resulted in the acquisition of six new members. The drive will end in June.

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Knox County—Mrs. H. E. Christenberry, President.

On March 8th, the Auxiliary met at the home of Mrs. W. W. Potter for an all-day meeting. The pure food and drug bill now before Congress was the subject of lengthy discussion. No action was taken on the bill, but such phases as cosmetics, pure foods, quack advertising, and patent medicines were discussed. Mrs. Jesse Hill, program chairman, and Mrs. R. G. Reaves, chairman of legislation, prepared the program. Speakers were: Mrs. Dewey Peters, Mrs. G. A. Williamson, Mrs. Joe S. Platt, Mrs. Carl R. Martin, Mrs. L. A. Haun, Mrs. Joe L. Raulston, Mrs. W. A. Sheldon, Mrs. John Moore, Mrs. R. G. Reaves, and Mrs. W. F. Dorsey. Mrs. H. E. Christenberry had charge of the business session. Several of the member of the Auxiliary are planning to attend the state meeting in Chattanooga.

Mrs. Dewey Peters and Mrs. Joe L. Raulston were elected delegates to the Chattanooga meeting, with Mrs. Jesse Hill and Mrs. W. F. Dorsey as alternates.

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Davidson County—Mrs. B. F. Byrd, President.

In place of the regular March meeting, Mrs. T. G. Pollard entertained the members of the Auxiliary and the visiting wives of the members of the Southeastern Surgical Convention at a beautifully appointed tea at her home. Mrs. B. F. Byrd presided over a brief business session, at which time the following were appointed as delegates: Mrs. Hearn Bradley, Mrs. Paul Morrissey, and

Mrs. Carl McMurray, with Mrs. Horace Gayden, Miss Estelle Farmer, Mrs. G. K. Carpenter, and Mrs. Henry Brackin as alternates. The tea marked the sixth birthday of the Auxiliary, in celebration of which Mrs. Carl McMurray, the historian, gave a paper entitled "A Miniature History of the Woman's Auxiliary to the American Medical Association." While tea was being served, the guests were entertained with a delightful arrangement of musical numbers. The artists who gave the program were Miss Melinda Jones, violinist, accompanied by Miss Mildred Clements; Miss Elizabeth Glasgow, violinist, accompanied by Miss Claudine Smelser; and Mrs. Fowler Hollabaugh, vocalist, with Mrs. Pollard Parsons accompanying.

The outstanding accomplishment of the public relations committee for the year was an open meeting of the Women's Civic Forum of Nashville, on April 2nd, sponsored by the Woman's Auxiliary to Davidson County Medical Society. Mrs. B. F. Byrd presented Dr. John W. Barton, president of Ward-Belmont College, who presided over the meeting. Dr. Barton introduced Dr. H. H. Shoulders as the speaker. The scholarly paper on "State Medicine," which Dr. Shoulders presented, was a profound and detailed discussion of the subject, attacking the theory of state medicine from many angles and hurling its invectives with telling effect. The provocative material of the paper brought forth interesting discussion from the floor. The enlightened laity present definitely seemed convinced that state medicine was a plan which they never cared to put into effect. We hope that this important paper will receive great publicity.

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#### PERSONAL ITEMS

Mrs. E. C. Mitchell of Memphis writes that Mrs. Bomar White, president of the Woman's Auxiliary to the Georgia Medical Society, expects to attend the Convention at Chattanooga.

Mrs. George Fuller and Mrs. G. Y. Sage of Atlanta also expect to come to the Convention.

## MEDICAL SOCIETIES

### *Blount County:*

Coming meetings promise the following programs:

April 19—"Medicine and Politics," by Dr. J. M. Waters. To open discussion, Dr. A. M. Gamble.

April 26—Paper by R. C. Kimbrough, of Madisonville.

May 3—"Calcium Deficiency in Pregnancy," by Dr. H. A. Callaway. To open discussion, Dr. W. C. Crowder.

May 10—"Focal Infection and Its Relation to General Systemic Disease," by Dr. L. C. Olin. To open discussion, Dr. A. L. Jones.

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### *Davidson County:*

April 3—Subject: Case Report, Agranulocytosis, by Dr. W. H. Witt. Discussion opened by Dr. O. N. Bryan.

Case Report: Arthroplasty of Jaw (moving picture), Dr. Carl Crutchfield. Discussion opened by Dr. George Seeman.

"Atresia of Oesophagus with Tracheo-oesophageal," by Dr. Frazier Binns. Discussion opened by Dr. Henry Litterer.

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### *Harding, Lawrence, Lewis, Perry, and Wayne:*

The Five-County Medical Society held its February meeting on the 27th, at Savannah. The program was as follows:

"Vomiting Problems in the Infant and Young Childhood," by Dr. W. L. Rucks, Memphis.

"The Effect of Diet, Particularly of Vitamins, in Teething," by Dr. A. G. Jacobs, Memphis.

"The Care and Feeding of the Well Child, Including Necessary Immunization, with a Discussion of Various Growth Factors, Including Endocrine Disorders," by Dr. E. C. Mitchell.

There was a discussion of all three papers at the conclusion of the third paper.

During luncheon, Dr. W. T. Pride, of Memphis, led a discussion on "Effect of

Maternal Management, Diet, Etc., on the Child." At that time also Dr. Richmond McKinney led a discussion on "The Effect of Diseased Tonsils and Adenoids on the Growing Child."

During the afternoon meeting the public was invited to hear Dr. W. T. Price on "The Value of Obstetrical Care on the Future Health of the Infant." Dr. Richmond McKinney, on "The Role Played by the Tonsils and Adenoids on the Health of the Growing Child." Dr. A. G. Jacobs, on "Role of the Teeth or Dental Care." Dr. E. C. Mitchell, on "The Care and Feeding of the Well Child, Including Immunization."

At the conclusion of the last paper, questions from the members were answered in detail.

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### *Knox County:*

On March 13, Dr. Oliver Hill spoke on "The Nervous Child." Discussion opened by Dr. Cross.

Dr. LeTellier's subject was "The Retina," and Dr. R. G. Reaves opened discussion at the meeting on March 20.

On March 27, Dr. Russell Ferguson, of New York, addressed the society. An excellent attendance was present to hear the guest speaker.

On April 3, Dr. J. B. Naive addressed the society. His subject was "The Present Status of Tuberculosis." Dr. Herbert Acuff was the opening discussionist.

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### *Washington County:*

Two papers are scheduled for May 3, as follows:

"Differential Diagnosis and Acute Indigestion and Acute Appendicitis," by Dr. C. W. Brabson.

"Report of Operative Results in a Series of Hernias," by Dr. E. T. West. Discussion by Dr. Cupp.

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### *Wilson County:*

Dr. J. L. Ames will be the essayist at the meeting to be held on May 3. The subject will be "Hypertension."



## LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. H. B. Everett, Memphis.  
 Vice President for East Tennessee—Dr. K. C. Copenhaver, Knoxville.  
 Vice President for Middle Tennessee—Dr. W. S. Rude, Ridgetop.  
 Vice President for West Tennessee—Dr. G. G. Mulherin, Brownsville.  
 Secretary-Editor—Dr. H. H. Shoulders.  
 Assistant Secretary-Editor—Dr. W. M. Hardy.

## TRUSTEES

Chairman and Treasurer—Dr. J. O. Manier, Doctors Building, Nashville.  
 Dr. Ralph Monger, Medical Arts Building, Knoxville.  
 Dr. W. L. Williamson, Sterick Building, Memphis.  
 Dr. W. P. Wood, Medical Building, Knoxville.  
 Dr. E. R. Zemp, Walnut Street, Knoxville.

## COUNCILORS

First District—Dr. T. B. Yancey, Kingsport.  
 Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. J. H. Revington, Chattanooga.  
 Fourth District—Dr. J. T. Moore, Algood.  
 Fifth District—Dr. John W. Sutton, Petersburg.  
 Sixth District—Dr. L. W. Edwards, Nashville.  
 Seventh District—Dr. B. T. Nolen, Franklin.  
 Eighth District—Dr. J. R. Thompson, Jackson.  
 Ninth District—Dr. E. H. Baird, Dyersburg.  
 Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.  
 Dr. H. H. Shoulders, Nashville; Middle Tennessee.  
 Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.  
 Dr. M. M. Cullom, Nashville; Middle Tennessee.  
 Dr. E. C. Ellett, Memphis; West Tennessee.

## OFFICERS OF COUNTY MEDICAL SOCIETIES FOR THE YEAR 1934

County	President	Vice President	Secretary-Treasurer
Anderson	J. M. Cox, Coal Creek	Thomas Jennings, Clinton	J. S. Hall, Clinton
Bedford	S. S. Moody, Shelbyville	W. T. Sharp, Farmington	Alfred Farrar, Shelbyville
Blount	E. W. Griffin, Townsend	C. C. Vinsant, Maryville	H. A. Calloway, Maryville
Bradley	E. R. Ferguson, Cleveland	Vance H. Bell, Cleveland	D. N. Arnold, Cleveland
Campbell	R. J. Buckman, Westbourne	S. S. Brown, Jellico	F. A. McClintock, Newcomb
Carroll	O. W. Fesmire, McKenzie	E. W. Hillsman, Trezevant	J. H. Williams, McKenzie
Carter	C. B. Baughman, Elizabethton		E. T. Pearson, Elizabethton
Coke			J. E. Hampton, Newport
Chester, Henderson, and Decatur			Wm. I. Howell, Lexington
Davidson	John M. Lee, Nashville	W. G. Kennon, Nashville	N. S. Shofner, Nashville
Dyer, Lake, and Crockett	W. S. Alexander, Ridgely	B. G. Marr, Dyersburg (Dyer)	
		R. E. Hellen, Ridgely, (Lake)	J. Paul Baird, Dyersburg
Gibson	Featherston Douglas, Dyer	Paul D. Jones	F. L. Roberts, Trenton
Giles	John Morris, Pulaski	Joe B. Wright, Lynnville	T. F. Booth, Pulaski
Greene	C. P. Fox, Greeneville	L. E. Dyer, Greeneville	M. A. Blanton, Mosheim
Grundy	D. H. Bryan, Monteagle	T. F. Taylor, Monteagle	U. B. Bowden, Pelham
Hamblen	D. R. Roach, Morristown		R. A. Purvis, Morristown
Hamilton	Franklin B. Bogart, Chattanooga	James L. Bibb, Chattanooga	Wm. J. Sheridan, Chattanooga
Hardin, Lawrence, Lewis, Perry, and Wayne	J. W. Danley, Lawrenceburg		C. C. Stockard, Lawrenceburg
Haywood	R. T. Keeton, Brownsville	Glenn T. Scott, Brownsville	Roy M. Lanier, Brownsville
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March 2

## 1. Case Report:

A Case of Multiple Myeloma with Hyperproteinemia—Dr. Louis Lowenstein.

A white farmer, aged 53 years, complained of back pains. There is marked anemia, thrombosis of central retinal veins and bleeding from gums. X-rays are compatible with diagnosis. He is presented as a case of multiple myeloma associated with hyperproteinemia (17.65 gm. per cent). At no time has Bence-Jones protein been found in blood or urine. Associated with the hyperproteinemia there is increased viscosity and osmotic pressure of the blood plasma; there is an increase in fibrinogen content of the blood; and increase in the englobulin fraction accounts for the extreme hyperproteinemia. Bone marrow biopsy showed, by the supravital method of staining, pathologic cell types belonging to the myelocytic series.

Case discussed by Drs. Youmans, Meleney and Brooks, and Mr. Joseph Akeroyd.

## 2. Studies on Phosphatase—Drs. Walter Wilkins and E. M. Regen.

Exposure of the bones of growing dogs to X-rays (1000-2000 r units) is followed by a marked decrease in phosphatase activity. Irradiation of the entire bodies of growing rabbits is followed by a decrease in phosphatase activity of the whole animal. The callus of fracture is much higher in phosphatase activity than normal bone. Transplants of bladder mucosa of the dog to the sheath of the rectus abdominus muscle result in the production of bone, if the transplant survives.

Paper discussed by Drs. Robinson, Brooks, Regen, Wells, and Pilcher.

## 3. Human Immunization with a Dermal Strain of Vaccine Cultivated on the Membranes of the Chick Embryo—Mr. G. John Buddingh, Drs. E. W. Goodpasture, and Lurline Richardson.

A dermal strain of vaccinia virus has been successfully cultivated, without bacterial



contamination, on the chorioallantoic membrane of the chick embryo through 125 successive generations without intervening mammalian passage. A technique has been developed by which large quantities of vaccine virus can be collected with practically no bacterial contamination. Production of vaccine by this method for use in human immunization is practicable. After determining that the pathogenicity and immunizing power of vaccine virus cultivated by this method for rabbits and monkeys is comparable to that of commercial calf lymph, 1,120 humans, ranging from 2 to 50 years of age, were vaccinated with this vaccine. Comparison with a large number of controls vaccinated with calf vaccine revealed no significant differences. In 918 primary vaccinations, 93 per cent positive reactions were obtained with the vaccine cultivated on the chick embryo. A bacteria free vaccine of good keeping qualities and reliable potency suitable for human vaccination can be produced by this method.

Paper discussed by Drs. Leathers, Luton, and Goodpasture.

You are urged to attend the seventy-ninth semiannual meeting of the Middle Tennessee Medical Association, Thursday and Friday, May 10-11, 1934, at Springfield.

DR. D. W. SMITH, *Secretary*.

The American Association for the Study of Goiter will meet in Cleveland, June 7, 8, 9. For program, write Dr. J. R. Yung, Corresponding Secretary, Terre Haute, Indiana.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Stability of U. S. P. Ether After the Metal Container Is Opened. Harry Gold, M.D., David Gold, B.A., New York. The Journal A. M. A., March 17, 1934.

Widely divergent opinions prevail as to the effect on patients of ether taken from a container that has been opened any length of time. Some

state that it becomes very irritant; some that it becomes very toxic, so that extremely small quantities produce collapse symptoms; others state that it loses some of its anesthetic properties so that it becomes almost impossible to produce satisfactory anesthesia. The fact is well established that when ether is exposed to air, moisture, light, or certain chemical substances which may act as catalysts, it undergoes oxidation with the formation chiefly of toxic aldehydes and peroxides. This oxidation appears to be erratic and to depend on factors that are not always in evidence. The results of tests for aldehydes, peroxides and acids were negative in all of 50 specimens U. S. P. ether in metal containers that had been opened and again stoppered one or many times at intervals during periods from four days to eight months from the time the container was first opened to the time a sample was tested for deterioration.

In these experiments an opportunity was offered to examine an old specimen of ether. The metal cap had been cut away and the can tightly stoppered with cork about 15 years previously. This test was negative for aldehydes and peroxides, but a positive one for acid.

Some of the specimens in the aforesaid tests were conducted upon 27-pound and 55-pound drums. In the author's conclusions he has determined that ether does not deteriorate rapidly under ordinary conditions when the metal containers are opened. And that also there is no evidence that ether especially purified for anesthesia has any material advantages over ordinary U. S. P. ether for anesthetic purposes. He recommends that hospitals buy ordinary U. S. P. ether in large steel drums, and ether may be drawn from these drums daily for anesthetic purposes. The ether in the drums may be tested daily for aldehydes and peroxides, there being some simple tests for each requiring only ten minutes to perform.

### DERMATOLOGY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

Pruritus Ani: Its Etiology and Treatment. Robert A. Scarborough, Ann. Surg. (Dec.), 1933. Archives of Dermatology and Syphilology, March, 1934.

Scarborough discards all etiologic theories other than that of abnormal anal conditions, the most important of which is interference with proper closure of the upper level of the anal canal, thereby enabling irritating secretions to seep into the anus, whose stratified but noncornified epithelium is peculiarly susceptible to maceration, erosion and fissuring, with consequent irritation of the underlying nerve bulbs. A relaxed sphincter, hemorrhoids or hypertrophied papillae may interfere with such closure; cryptitis and foreign bodies may result in irritating discharges. Fungous infections are discounted except as being secondary. Of 304 patients who came to Scarborough's proctologic

clinic, 152 suffered from pruritus ani. A definite local cause of the type mentioned was found in every case in which an examination was made except the first one. Because of the expense involved in surgical treatment only 63 of the 152 submitted to the necessary therapeutic measures. Fifty-two of the latter group completed the necessary surgical measures with "complete and absolute relief from their pruritus, without recurrence, and without the use of analgesic ointments or the employment of the various nerve-cutting or nerve-blocking measures which may give temporary relief."

## OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

The Treatment of Painful Absolute Glaucoma and Other Eye Diseases with Retrobulbar Injections of Alcohol. J. Fejer. *Archives of Ophthalmology*, March, 1934.

The author uses the method of Gruter, who first cocaineizes the eye and then injects 1 cc. of 2 per cent procaine hydrochloride to the right and left of the eyeball near the posterior pole by means of a curved Siegrist needle. After five minutes a similar amount of 80 per cent alcohol is injected in the same manner and into the same region. Fifteen minutes later the eyeball is entirely anesthetic, and all the ocular muscles are paralyzed. Inflammation of the orbital tissues follows with protrusion of the globe, chemosis and stain. This injection was used in five cases of absolute painful glaucoma. In the first two, the patients, a woman of 59 and a man of 75, received permanent relief from pain. In the third case the pain was relieved, but the eye had to be enucleated six weeks later because the pain returned. The author attributes this recurrence to the fact that the inner surface of the eyeball was lined with a thin shell of bone. In the fourth case, that of a sailor, aged 63, pain was permanently relieved, but the eye remained hard. In the fifth case, pain returned a week after the injection of alcohol. The eye was enucleated and found to contain a large fusocellular melanoma. The author does not recommend this therapy in seeing eyes.

## OTOLOGY, LARYNGOLOGY, RHINOLOGY

By W. G. KENNON, M.D.  
Doctors Building, Nashville

The Etiology of Primary Granulocytopenia (Agranulocytic Angina). Frederick W. Madison, M.D., and Theodore L. Squier, M.D., Milwaukee, Wisconsin. *Journal A. M. A.*, Volume 102, Number 10, Page 755, March 10, 1934.

In 1922, when Schultz described the syndrome which he called agranulocytosis, he suggested that it might be the result of a depressant on the bone

marrow of an unknown microorganism or possibly of an unknown chemical agent. Search for an organism producing such an effect has met with but little success. Investigation of a possible chemical etiology has been more successful.

The accurate reproduction of the clinical picture has been successfully accomplished in experimental animals by the use of benzene, ortho-oxybenzoic acid and hydroquinone.

It has been shown that phenobarbital produces a marked reduction of the granulocytes in dogs. Exposure of human beings to benzene causes in some cases marked depression of the bone marrow with especially marked effect on the granulocytic centers.

A typical granulocytopenia may occasionally follow the administration of arsphenamine. Kracke observed that eight of nine patients with primary granulocytopenia seen by him had been taking drugs of the coal tar series, prior to the onset of their illness. He suggested that such drugs, because of the benzene ring, might be of etiologic importance. His attempts to reproduce the condition in rabbits by feeding them drugs of this group were not successful.

In November, 1931, while we were observing a case of primary granulocytopenia, we noted a sudden unfavorable change in the granulocyte level, which had been showing a satisfactory response. It was discovered that he had been given a sedative dose of a barbituric acid derivative on the evening before the granulocyte decrease. We later found that immediately preceding the onset of the illness he had been taking allonal (allylisopropylbarbituric acid with amidopyrine), and that for some time previously he had been in the habit of taking that drug frequently for restlessness and insomnia.

Shortly thereafter we saw a woman who, two weeks previously, had had an acute cholecystitis with normal leukocyte response. She had had no treatment except restricted diet and two allonal tablets each night. At the end of that period she had a typical picture of primary granulocytopenia with twelve hundred white blood cells and complete absence of granulocytes despite the recovery from the cholecystitis. Twelve additional cases have been observed since that time. In each of the fourteen cases there was a definite history of taking amidopyrine in combination with a barbiturate, amidopyrine alone or, in one instance, in combination with other drugs, immediately preceding the clinical discovery of the granulocytopenia. The relation between the use of these drugs and the development of the typical blood picture was quite striking in several patients. Although the methods used for stimulation of granulopoiesis were similar in all patients, amidopyrine was strictly prohibited in eight of the cases, but its use was permitted in six others because its harmful effect was not fully appreciated. In the group of six cases in which amidopyrine alone or in combination with barbiturates was used, the mortality was one hundred per cent, in spite of the fact that



four recovered from the acute attack. Only two of the eight patients, where the use of the drug was prohibited, died, and in both of these cases the granulocytopenia was so extreme when the diagnosis was made that no bone marrow response to stimulation was obtained and death occurred in thirty-six hours and four days, respectively.

#### SUMMARY

1. The increase in the incidence of primary granulocytopenia has paralleled the increase in the use of drugs containing amidopyrine and especially those containing amidopyrine with a barbiturate.

2. The disease has occurred most frequently in persons apt to be taking drugs; physicians, nurses, and those directly under the care of a physician.

3. In each of the fourteen patients the onset was directly preceded by the use of amidopyrine alone or in combination with a barbiturate.

4. The mortality was one hundred per cent in a group of six patients who continued the use of these drugs. In a group of eight patients, in which these drugs were discontinued, the mortality was twenty-five per cent.

5. A rapid and profound fall in the granulocytes was observed in two patients, who had recovered from the disease, following a single dose of amidopyrine.

To fully appreciate the significance of these observations and the apparently unquestionable evidence by which the conclusions are reached, the original paper should be carefully read.

### **SURGERY—GENERAL AND ABDOMINAL**

By ROBIN F. MASON, M.D., F.A.C.S.  
735 Medical Arts Building, Memphis

Jejunal Ulcer. D. P. D. Wilkes, M.Ch., F. R. C. S., Edinburgh. *Annals of Surgery*, March, 1934, Page 401.

The problem of jejunal ulcer is of real though melancholy interest to the surgeon, because it is his own doing.

Gastrojejunostomy, once regarded as a most beneficent operation, is now looked askance by many surgeons and abandoned by others.

In Europe, gastric resection is now the operation of choice, though in England and America this more radical procedure is not generally done, especially for duodenal ulcer.

Jejunal ulcer, admittedly serious, is most common following gastrojejunostomy. Its incidence is variously estimated as from 2 to 40 per cent. It seems to be most common among Teutons and Semites. My own incidence is about 3.5 per cent following gastrojejunostomy for ulcer and is usually in those having high acidity with little retention. It occurs rarely in the reverse type. Therefore, the best preventive is to avoid gastrojejunostomy in cases of ulcer with high acidity and little retention, using rather for that type of case gastroduodenostomy.

Another factor in producing jejunal ulcer is, of course, infected teeth, tonsils, etc., which should be eradicated. The heavy use of clamps may also be contributory. Furthermore, during the months of convalescence, careful diet and alkalies are imperative. Of course, the ulcer may be away from the suture line, but they may be considered the same.

My experience is that jejunal ulcer follows hard on the operation, especially in those cases which complain of heartburn and acidity during the early postoperative stage. Recurrent hemorrhage is the most frequent complication and calls for surgical treatment, preceded by blood transfusion.

Other complications are: perforations into the free peritoneal cavity, subacute perforations with formation of an inflammatory mass to the left of the umbilicus, penetrating jejunal ulcer near the stoma, secondary duodenal stosis and jejuno-colic or gastrojejuno-colic fistula which is always of grave import.

In the last named complication, a two-staged operation is often the safest procedure.

In the first stage the portion of colon involved is cut off distally and proximally and the ends turned in, the involved piece of colon being left attached to the stomach. The remaining pieces of colon are then anastomosed end to end and the abdomen closed. After the patient has recovered sufficiently, the piece of colon attached to the stomach is then resected from the stomach and the stoma in the stomach is closed.

#### SUMMARY

(1) The two main factors in producing jejunal ulcer after gastroenterostomy are high gastric acidity and infection.

(2) A very high gastric acidity should be regarded as a contraindication to gastroenterostomy—a gastroduodenostomy should be preferred.

(3) All septic foci in teeth, tonsils, appendix and gall bladder should be dealt with in ulcer cases.

(4) Partial gastrectomy or removal of the stoma, followed by gastroduodenostomy, are the operations of choice in jejunal ulcer.

(5) The frequent occurrence of secondary duodenal ileus and the necessity for treatment of this by duodenojejunostomy is emphasized.

(6) In dealing with cases of jejuno-colic or gastrojejuno-colic fistula, the advantages of a two-stage operation should always be considered.

### **PEDIATRICS**

By JOHN M. LEE, M.D.  
Doctors Building, Nashville

Dental Caries. Rickets in Relation to Caries in the Deciduous and in the Permanent Teeth. Alfred F. Hess, M.D., Harold Abramson, M.D., and J. M. Lewis, M.D., New York. *Amer. Jour. Dis. Children*, March, 1934.

A study was carried out in an institution on a group of children who had been carefully observed throughout infancy, from a dental as well as from

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a medical point of view. One group had been definitely protected against rickets by means of cod liver oil or some other calcifying agent, whereas the other group had had infantile rickets. At the age of from 6 to 9 years, it was found that caries had developed to a greater extent in the deciduous teeth of the "rachitic group" than in those of the "protected group." The permanent teeth, however, showed caries to about the same extent in both groups.

The development of caries of the deciduous teeth, during a ten-year period, in children raised in an institution, was found to be far less for those admitted during the first year of life than for those admitted during the second or third year. This favorable result is attributed largely to the fact that the children in the institution had been given a calcifying factor.

The permanent teeth of a group of negro children, from 8 to 14 years of age, were examined for caries. These children had been brought up in a district of New York City which, in the period of their infancy, was scourged with rickets to the greatest extent. Nevertheless, the dentures of these children were superior to those of a similar group of white children from New York.

Caries of the permanent teeth is not due to infantile rickets, but to a nutritional disturbance occurring in childhood and early adult life. The first permanent molar teeth do not undergo calcification until late in the rachitic period, and the second permanent molars, which are likewise markedly subject to caries, do not calcify until far beyond this period.

## UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
Medical Building, Knoxville

Chronic Prostatitis. David M. Davis. *Journal Urol.*, Vol. XXX, November, 1933.

Most cases of prostatitis improve under ordinary treatment and are cured. The obstinate cases are the ones to which attention is called with symptoms of marked diurnal and nocturnal frequency. He cites one such case that has remained perfectly well after removing a section from the anterior commissure with the punch.

It is generally admitted that contractures of the vesical neck and median bar obstructions can be caused by prostatic infection of long standing. The author believes that by removal of abnormal tissue from within the urethra, drainage is improved just as happens in perineal sections.

He concludes: 1. That chronic prostatitis which resists ordinary treatment is practically always due to some anatomical change, either in the prostatic urethra or vesical orifice.

2. Complete correction of these changes is usually followed by spontaneous cure.

3. The changes found are contracture of the vesical neck, median bar, diverticulitis of the urethra, and polyps.

4. After correction of above, vesiculitis will usually subside spontaneously.

5. Surgical attack may be made even in the presence of active infection except where there is acute inflammation and fever.

The pan endoscope of McCarthy, together with his resectoscope, is recommended both for diagnosis and treatment of this condition.

Obstruction of the bladder neck occurs more frequently than has been suspected, and without the classical symptom-complex of obstruction. For this reason it is often overlooked.

Eight interesting case reports are included.

The Value of a Negative Hinton Test in the Exclusion of Neurosyphilis. Berk & Hinton. *Am. J. Syphilis*, January, 1934.

In 1927, Raeder presented evidence which indicated that the blood of only about 10 per cent of neurosyphilitics having abnormal spinal fluids were negative to Hinton test, while 55 per cent were negative to Wassermann.

The technique of the Hinton test is given.

This study comprised 1,000 patients who had been infected with syphilis and upon whom lumbar puncture and spinal fluid examinations had been done jointly by the nerve clinic, the syphilis clinic, and the laboratory department of the Boston Dispensary. Two hundred and thirteen of this number failed to cooperate, leaving 787 patients which were studied. Most of these were ambulatory cases. Two hundred and three of these were undoubtedly neurosyphilitics as indicated by definite laboratory or clinical evidence. Besides these 203, there were 55 suggestive cases, and 529 who showed no clinical or laboratory evidence of neurosyphilis.

The spinal fluid was considered normal when 1 cc. and smaller quantities were negative to Wassermann, the cell count was 6 or less, etc.

The positive fluids were those which showed a positive Wassermann with or without any of the following: 10 or more cells, total protein of 75 mg. or above, slight increase in globulin, or a gold sol reaction of three or more in zone 1 or 2.

The Hinton test was positive in every case in which the spinal fluid was positive, negative in 15 of the 154 cases which were questionable neurosyphilitics. In all these 15 cases the spinal Wassermann was also negative, and all had less than 70 mg. protein.

Of the 55 who had either clinical or laboratory evidence of neurosyphilis, 48 had positive Hinton tests, one doubtful, and six negative. Of the six negative Hinton tests, one showed a doubtful spinal Wassermann, and 5 only pathologic gold sol curves.

There was not a single case in the 787 who had definite pathologic spinal fluids where the Hinton test was negative.

They concluded that a negative Hinton in the blood almost rules out neurosyphilis.

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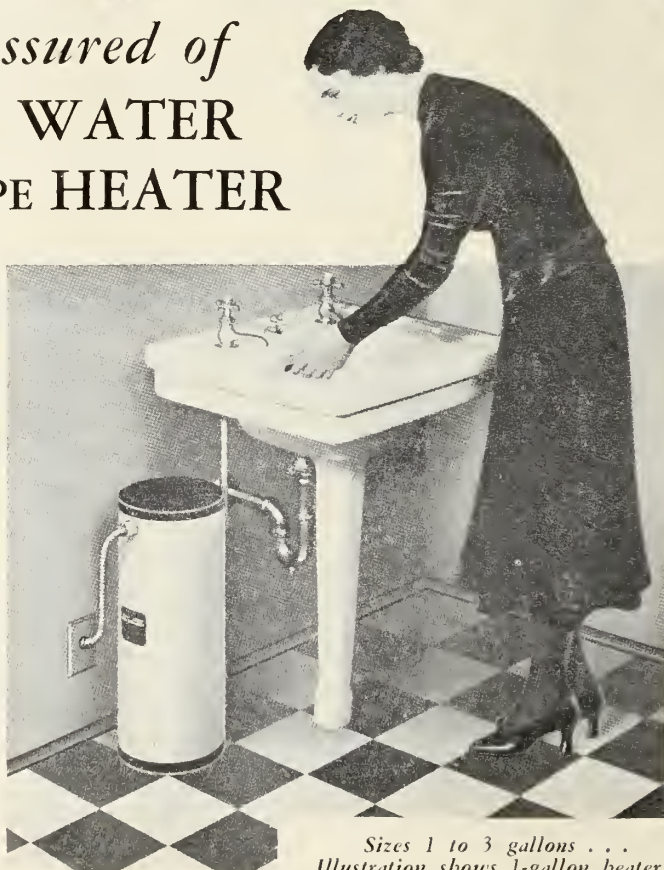
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# THE JOURNAL

OF THE

## TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

ISSUED MONTHLY, Under Direction of the Trustees

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W. M. HARDY, M.D., Asst. Secretary-Editor

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### RELATIONSHIPS IN MEDICAL PRACTICE\*

H. B. EVERETT, M.D., Memphis

FOR more than a hundred years the Tennessee State Medical Society has endeavored to adjust the practice of its members to the ever changing social and economic conditions of the country. As is inevitable in an undertaking of this magnitude, mistakes have occurred, but on the whole great progress has been made and seemingly impossible adjustments accomplished. Again we are faced with grave problems which clamor insistently for solution, and it is our responsibility to meet them thoughtfully but fearlessly, ever bearing in mind that the thing we most desire is the good of the sick entrusted to our care.

Medical practice, as conducted by the majority of the members of this society, consists of two major groups—curative and preventive. We need to study the trend of both so that we may make adjustments before harmful friction occurs. "Rubbing parts make a noise," is a bit of homely wisdom. A sharp distinction has been made because of the appeal preventive medicine makes to political organizations for support. Curative medicine in its present form has no such appeal to make. As members of the curative group, we oppose any attempt to practice medicine except through channels recognized by this society as being sound and in accordance with the standards of organized medicine. Few of us believe that sanitary engineers, statistical clerks, epidemiologists, organizers, and doctors of

public health, useful as they are, will ever completely or partially control infection, metabolic diseases, cancer, and other major ills. The knowledge, laboriously gained in curative medicine, which is useful to preventive medicine, has been exploited so many times that we cannot refrain from talking plainly about it. In many instances preventive medicine competes unfairly with individual medical practitioners. For example: diagnostic laboratory work. The purpose of this is to gather statistics which are used in persuading political bosses of the useful service rendered so that programs may be expanded with funds gathered by taxation. A representative committee could attack this problem and determine whether too much is not given away by such methods. Curative medical activities are extremely useful to preventive medicine, and without the parent organization, development of this new specialty in medicine may be retarded. Curative medicine has learned to resent the interference of lay organizations in its relationships with preventive medicine. The latter group would place in nonmedical hands its affairs in an effort to dominate medical practice. We believe preventive medicine will function better if legitimate opposition by curative medicine is furnished it. Guidance of those practicing preventive medicine should in no wise differ from that regulating others in medical practice. Preventive medicine should not seek channels through political organizations to destroy or harness the power in

\*Presidential address, read before the Tennessee State Medical Association, Chattanooga, April 10, 11, 12, 1934.



curative medicine for its own ends, and place the destinies of medical practice in nonmedical hands. As we see the trend, this is possible.

The great decision that must be made by the curative group of physicians soon will be between state medicine and individual or so-called private practice. There are many plausible arguments for and against both, but we tell you that the real decision lies with ourselves. Remember that when you work for the state you will be subject to the same laws of political preferment under which any other government job holder works. Don't think that when doctors are under state medicine that they will purify politics; rather the reverse. Don't think that because they offer you a temporary sop of a regular pay check that you will not be faced by economic want, for some one more powerful than you, politically, will not only want your position, but will get it. Don't be like Esau—sell your birthright of a free and independent profession for a mess of pottage in the shape of a regular pay check for a few months. Remember that the man who has authority to stop your pay will insist on being obeyed, in not only matters of policy, but also in matters of treatment. Think of these things well and long, for once you have lost them they will be gone for a long time. Don't look at the men at the head of these systems, but consider carefully the lot of the individual physicians, because, after all, the majority of us will find ourselves among the latter should this change be made. This much for state medicine as it affects us as individuals. We should consider the effect of this change upon the welfare of the patient.

Most of the clamor for state medicine has come from laymen. These well-intentioned theorists attempt to tell the medical profession how they should run their business. Can it be shown that government-conducted institutions for the care of the sick are more efficient than our private hospitals? Are the government doctors, either state or national, more efficient than our private ones? Has the government care reduced morbidity or mortality in any country where it has

been tried? One fervent advocate of state medicine loudly proclaims the large number of people that are without adequate medical care. True, but how many people of this number are without adequate medical care because they cannot get it, and how many are without this care because they won't accept it or won't pay for it? Which is the larger, the bill for legitimate medical services or that paid to quacks and for patent medicines? Remember the large number of people that will not accept even free vaccination against smallpox. You cannot herd men and women in like cattle and sheep for government treatment.

Not only have we the many angles suggested above to consider, but there is also the angle of the patient to his medical adviser. State medicine means regular hours, vacations, etc. One physician is not responsible for a case. When the gong rings he grabs his hat and leaves. Think you that such a system promotes efficient care of the sick? You may think that we overstate the case, but go into any public institution today and you will find this same condition which we have described. There is none of the intimacy of the private practitioner, and very little of the confidence. The patient takes what is given because it is all that he can get, and any complaint means that he will be discharged at the very first opportunity.

The professional relations between doctors and nurses have changed. Nurses have in many instances become inclined to overstep the line between the two professions by prescribing for patients and outlining treatment. In some instances this has been with the physician's knowledge and consent. Some surgeons have been known to allow the nurse to carry out the postoperative care, and not a few disasters which could have been foreseen have resulted from this lax policy. The medical society should emphasize the individual and peculiar responsibility of the physician to his patient, and drive home the fact that this responsibility cannot be shifted and shared by any except a regularly qualified colleague called in consultation.

The legal status of those who unlawfully

practice medicine remains unchanged, even though entrance requirements in medical schools have advanced beyond limits prevailing at the time the law was enacted. The offense is rated with a maximum fine of twenty-five dollars. If this fine is a measure of value of medical service, we think it is too low. There are many who are guilty, but few are punished. The indifferent attitude of physicians to the offense is in a measure responsible for the formation of cults and systems and individuals engaged in exploiting the public with a single idea in therapeutics. Some are even protected by newer laws designed to fit their needs. The merits of their claims and procedures are never submitted to the medical group for opinions as to the genuineness of these claims.

Contract medical practice has relationships which are not altogether wholesome. In some instances doctors furnish charity, not in their own names, but in the name of an institution directed by lay organizations. We believe that doctors should dispense their charity under their own name. The mutual interest of doctor and patient is lessened because the employer of both must be served first—thus leading to the grossest biasness. By all means, the ideal relationship of doctor direct with patient should be sought.

The group practice of medicine develops strange relationships with patients and lessens the trust of patient in physician. Wholesaling medical practice at a profit to the few heads of its sections is not good for the ideals in relationships of patient and physician. Hospitals should supply what is needed by the individual physician to adequately serve his patient, and grouping in a clinic is not necessary or advisable. Many mistakes, traceable to clinic methods, are frequently met by individual physicians. Consultation, when wisely chosen in the interest of the patient and not the doctor, is still the ideal way for surgeon or physician to conduct a medical practice.

Relationships between medical practice

and hospital continue to evolve new problems. Many of the poorly endowed hospitals have entered into insurance schemes and programs which have many criticisable features. Not the least of these is the attempt to extend hospital care beyond its natural scope. They compete with the physician as a preferred creditor over him. The hospital field is a well-defined one, and in no sense should they compete with individual physicians by developing O. P. D. clinics. Doctors can stop this encroachment, and should do so.

Radio messages to the public about medicinal remedies is a new feature growing under our eyes. Do you prescribe Crazy Crystals for constipation? After this exploitation fails, new ones will follow. Air prescribing is wresting medical practice from the doctor.

In the above, many criticisms have been offered and many faults found. Such a procedure should always be followed by constructive suggestions. We believe that all the defects mentioned above can and should be corrected by medicine itself. This state society should urge all the component county societies to interest themselves in these problems and their solution. Scientific papers and study are necessary, but at the present moment the matters that we have brought to your attention are clamoring for solution. If we study these matters as a group and discuss them there will be gradually evolved a satisfactory solution. Physicians will be brought to see their mutual dependence and the need for a close co-operative organization. County medical societies should be given supervision of all the activities that affect the practice of medicine as a whole within their community and should act for the benefit of the patient and the protection of the physicians. Only by such an organization and such a study can the solution of these problems be found. Unless they are solved we may well ask ourselves: Will the doctor of the future play only a minor role in medical practice?



## A COMPARISON OF THE EXISTING RELATIONSHIP BETWEEN THE MEDICAL PROFESSION AND THE STATE HEALTH DEPARTMENT IN TENNESSEE AND OTHER SOUTHERN STATES\*

J. O. MANIER, M.D., Nashville

THE effort in recent years, and especially during the last session of the State Legislature, by the Tennessee State Medical Association to change the present machinery of control of the Tennessee State Health Department incurred both opposition and criticism from certain quarters in the State. Being unprepared, for various reasons, on the spur of the moment to meet such criticism, and realizing now that similar criticism will again be heard in the coming year when bills relating to the Department of Health are introduced in the Legislature, it has been thought wise to bring before this body all information which bears on the suggested change, in order that the individual members of the State Medical Association may be in possession of the necessary facts to combat effectively any opposition that may arise. In discussing this matter, it shall be the object of this paper to do so in an utterly fair and impartial manner, and, in so far as possible, to deal in irrefutable facts and avoid expressions of personal opinion.

To consider intelligently a suggested change in any law or department requires a knowledge of such laws and departments as they exist at the present time and also have existed in the recent past, and for this reason it is deemed advisable, briefly, to place before you certain facts in relation to the State Department of Public Health.

Prior to 1923, the Department of Public Health was under the control of a State Board of Public Health consisting of three doctors and the Commissioner of Agriculture—all appointed by the Governor. These members served without remuneration, so far as their position on the Board of Health was concerned, and determined the policies and formulated the regulations governing the department's activities. With the passage of the Reorganization Bill in 1923, the

Board of Health was abolished and the entire Department of Health placed under a Commissioner of Public Health, appointed by the Governor and by law given full and complete power to establish all policies, regulations, etc., of the department.

During the past few years a steadily increasing amount of friction between the medical profession and the Public Health Department made it quite obvious that unless prompt adjustment of differences was effected there could be no other end result than for public health to suffer and the Department of Public Health steadily to lose its proper effectiveness. The Tennessee State Medical Association, having been the father and founder of the Department of Health, felt that such a state of affairs should be corrected, and to this end, and with the approval of the health department, had a bill drawn to recreate a State Board of Health consisting of six doctors and one dentist, to be appointed by the Governor from nominees submitted by the State Medical and Dental Associations. This bill was approved by the House of Delegates of the State Association at the Memphis meeting in 1932 by the Commissioner of Health and members of his staff, who, with members of the medical profession, presented and explained the bill to the various county societies during the summer and fall of 1932, and finally by the candidates for governor, each of whom even went so far as to assure the profession that in event of his election the proposed bill would have his unqualified support.

With apparently no opposition in sight, practically the entire profession felt that the passage of the bill was merely a matter of form until it was introduced into the Legislature, where it was actively and openly opposed by some members of the State Department of Health and under cover by others, as well as by certain women's organizations in part or in whole en-

\*Read before the Tennessee State Medical Association, Chattanooga, April 10, 11, 12, 1934.

couraged directly or indirectly by the State Department of Health or its subsidiaries. Every type of objection and criticism was offered against the bill, and your legislative and liaison committees who were in charge of the passage of the bill, in a spirit of commendable fairness, agreed to certain alterations in the original bill, which changed the personnel of the proposed board from six doctors and one dentist to six doctors, one dentist, one pharmacist, and one woman—a representative of the women's organizations of the State—all of these to be appointed by the Governor from lists of nominees certified by their respective organizations. In spite of these fair concessions, the bill, after passing the House, failed of passage in the Senate by a few votes in the last days of the legislative session.

When a battle is lost, the only constructive approach to the next contest is to determine what facts and faults were behind the defeat, and to remove or correct them prior to another combat. Generally speaking, the opposition to the bill was along the following lines: (1) That the personnel of the bill as originally introduced was restricted to doctors and dentists, and that the board should have upon it lay representation. This objection was of course met by the final draft of the bill, which provided for a pharmacist and a woman representative of the organized women's State organizations. And (2) that such a board was dangerous politically and economically, would impede the proper development and maintenance of public health, and would destroy the Public Health Department.

The answer to these last objections, it would seem, can be fairly made (1) along certain broad general principles which from the beginning of our country have constituted the very foundation of its government, and (2) by comparing our present Public Health Department as regards its administrative control, allocation of power, etc., with similar departments existing in the other thirteen Southern States which have necessarily to a large degree the same health problems to meet as we have in Tennessee.

The general principles alluded to above largely revolve around the question as to whether, on the one hand, public health in Tennessee will prosper better under the control of a department operated under a monarchial type of administration, or, on the other, under a representative democratic form of control. At the present time it can be fairly and honestly stated that the Commissioner of Health is a political appointee appointed by each Governor and removable only at the will of the Governor. Once appointed, however, the Commissioner of Health is a monarch in his department, having almost unrestricted powers as to the policies and regulations of the department, personnel, allocation of certain funds, etc. There are some who believe in a monarchistic form of government, but even they admit that it is a failure unless the monarch is honest, unselfish, able, etc., and the further fact that history records but few if any such monarchs.

A State Department of Public Health should be removed as far as possible from political activities of any kind, and certainly no one will deny that this laudable and proper objective can more nearly be attained when the policies and regulations of the department are under the control of a board whose members come from the different grand divisions of the State—notorious for their political party differences—rather than when under the control of one man—the Commissioner of Health—who is entirely responsible to the Governor who appointed him and who has full control over the personnel of his department, and to a large degree, indirect influence in many counties by the juggling of so-called aid funds either of State or extra-State origin.

It is true that the present Health Department has an advisory public health council which has literally no control over the policies of the department nor the activities of the Commissioner, is appointed by the Governor, and in the case of the first such board appointed some two years ago, consisted entirely of men nominated to the Governor by the Commissioner of Health. Such a board—no matter how honest, able, nor sincere its members—cannot be said to repre-



sent the organized medical profession of Tennessee, but, since it is without power of any kind, to be merely a screen for the Commissioner's activities.

Despite the fact that the law authorizing an advisory council of public health was passed by the Legislature of 1923, no effort was made by the Department of Health to avail itself of such an advisory board until in 1932—nine years later—and after the State Medical Society in April of that year had taken action looking toward the creation of a State Board of Health. After this action was taken by the State Medical Association, then, at the request of the Commissioner of Health, Governor Horton appointed the first advisory council of health, or, to put matters more accurately, the Governor officially sanctioned the five men proposed by the Commissioner of Health. In the fall of 1932, in a communication to the American Medical Association, Dr. Bishop made the following statement: "In my opinion, no more constructive action has been taken during recent years in the advancement of the public health interest of Tennessee than the formation of this council. It brings together expert medical opinion, sound judgment, and should guarantee the continued soundness of the policies and practices of the State health organization." It is difficult to harmonize this statement with the nine-year delay in asking for the appointment of the council. At the time this statement was made, no meeting of the Advisory Council of Health had been held, and when some months later a meeting was held, the major matter considered by it was the request from the Commissioner of Health that the council approve in blank an appropriation for the coming biennium. This, of course, the council naturally and rightfully refused to do without itemized information as to how the funds desired were to be spent. As no further meeting was called, the information requested was never furnished.

Since the legislative session of 1933, at which the State Association bill to create a Board of Health was defeated, every effort has been made by the Commissioner of Health and others under his control to se-

cure official recognition of the Advisory Council of Public Health by the State Medical Association. This effort is clearly shown in the correspondence between the Commissioner of Health and the liaison committee during the latter half of 1933 in reference to the charges and complaints made by the Madison County Medical Society against certain practices of the State Health Department. Reference to the February issue of the *Journal of the Tennessee State Medical Association*, which contains an abstract of the correspondence referred to, will show beyond peradventure of a doubt how often Dr. Bishop wilfully evaded the direct question as to what his instructions were and would be in the future to his case-finding units as regards furnishing unrestricted service to any who might apply by repeatedly stating that he would lay the matter before the present Advisory Health Council to consider and settle the question asked. Quite properly, the chairman of the liaison committee replied that no action of the council would be satisfactory, since the council by law had no power to draw up regulations, formulate policies, etc., and that only the Commissioner himself could bind the department to any agreement.

Further effort to secure recognition of the Advisory Council of Health has recently appeared in an issue of *Health Briefs*—a publication of the State Health Department, edited by the Commissioner of Health and mailed more or less broadcast to both laymen and professional men of the State at the expense of the taxpayers. This article in question is written by Dr. W. S. Leathers, who is now chairman of the Advisory Council of Public Health, having been appointed by Governor McAlister to fill one of the vacancies on the council created by resignations of previous members submitted during the past year in protest against certain activities of the Health Department. This article merits consideration in this paper in view of the fact that in quite a few instances it is by inference misleading, whether with intent or not. The fact is recited in the introductory paragraph that each of the forty-eight states now has a State Depart-

ment of Public Health which is in charge of a director or executive officer, and that "There should be in every state or city a board of health or public health council to advise with the health officer and approve the general policies of the Health Department. A board will not function properly if it usurps the prerogatives of a health officer and assumes responsibilities for the administrative functions which rightfully belong to the state or local health officer. No Board of Public Health commission can, with justice to itself nor with benefit to the public, assume such direct administrative powers. These facts serve to emphasize a few inviolate principles in the organization of an effective public health service."

Such a statement as the above, coming from a man who a few years ago was connected in an executive capacity with the health department of a neighboring state, who is at the present time engaged in the teaching of public health and is now serving as the chairman of the Tennessee Advisory Council of Public Health, would naturally lead the casual uninformed reader to the belief that it was representative of the principles under which the average present-day board of health operated (rather than that it represented the writer's personal opinion). That such is not the fact is shown very clearly by an analysis of the laws establishing the powers of the boards of health in the so-called Southern States. In each of the eleven Southern States in which boards of health exist, the board has full and absolute power to make and enforce all regulations as well as determine all policies. How different the situation in the State of Tennessee, where the Commissioner has all these powers vested in himself, where his council is by law said to be only advisory, and where, as stated in the article under discussion, "All matters for the consideration of this council must be recommended by the Commissioner of Public Health." What an effective council one has when its membership has not even the right or power to bring before it matters to be considered, but in its advisory capacity it can only advise even on those suggestions which the Commissioner may see fit or desire to bring before it.

One can scarcely conceive of an attitude so completely out of line with the trend of modern life. Does any large business or corporation with an executive officer and a board of directors give to such executive officer autocratic power over the corporation without regard to the dictates of the executive board, or is it more common to see such business or corporation have possibly an executive officer whose function is largely to carry out the mandates of the executive board? Such a position as that suggested in the article is seemingly utterly defenseless.

It is further stated that "The records show that the Tennessee Department of Public Health has used the liaison committee to determine the policies which should be recognized in the administration of health activities. The State Department of Public Health is desirous of adopting policies which will not be in conflict with the privileges and prerogatives of the practitioner of medicine. It is our desire to maintain the wholesome cooperative relationship which has largely prevailed between the State and local public health agencies and the practitioner of medicine." These statements can be branded as not only misleading but in the main as being not even in keeping with facts. In the first place, within the last year the Department of Public Health has in every way at its command endeavored to combat and oppose every move initiated by the liaison committee. In proof of this somewhat plain statement one has only to cite as examples the open opposition of the Department of Public Health and its officials to the bill proposed by the liaison committee and approved by the House of Delegates of this body to create a State Board of Health. Not even any of the State Health Department officials at the present time deny that they opposed this bill before the last Legislature, despite the fact that prior to its introduction they had openly and individually approved the bill in theory and in fact. The Commissioner of Health's attitude in the matter of the Madison County Society's complaint when he finally made the statement that his case-finding units were instructed to furnish X-ray services, etc., to



any and all citizens of the State of Tennessee who might apply for such services irrespective of financial status, certainly shows no desire on the part of the department to respect "the privileges and prerogatives of the practitioner of medicine."

If, as stated, it was the desire of the department "To maintain the wholesome co-operative relationship which has largely prevailed between the State Department and the practitioner of medicine," then the Commissioner of Health as representative of the department could have taken a long step forward in assuring the organized profession of his desire to cooperate with them had he nominated to the Governor and had appointed to his Advisory Council of Health some of the men nominated by the House of Delegates of this association at its last meeting. This list of eighteen names was no secret, as it had appeared in the public press, and the Commissioner had knowledge of who appeared on this list and certainly could not with justification have disapproved of all of these nominees. Surely his friendliness to the medical profession and the alleged desire of his department to cooperate with the profession would have been more obvious and believable had his nominees been selected from the names approved by this body rather than in at least one instance of the three new men appointed having been a man who is known, during the legislative session, to have exerted covertly his every power and influence to defeat the State Association board of health bill. At the September 15th meeting of the Advisory Council of Health it is stated that the following resolution was passed by the Council, which will be followed in all its deliberation: "That the Public Health Commission be authorized by the Commissioner of Public Health and empowered by the Governor to pass upon all policies of the State Department of Public Health and approve all major appointments of personnel." Such a resolution is misleading and can only serve to deceive, since in so far as existing statutes go the council might just as well have resolved that the present Commissioner of Health be removed from his office. In passing such a resolution, the

council assumes a power which it does not by law possess. The resolution does not show that the Commissioner approved this action, but for the sake of argument, granting that he did, what does it mean since it is still within the power of the Commissioner of Health to at any time withdraw his approval and continue to conduct his department in the autocratic and monarchial manner which the present existing law permits him to do? Such a resolution could have had just one end in view, i.e., to deceive the public and the medical profession into believing that the medical profession had some voice in the creation of the policies of the present Health Department. The answer to the deception embodied in this cleverly-worded resolution is the unwillingness of the Health Department and its present Commissioner of Health to accept even any form of fair control such as will be shown by statistics to exist in practically every other Southern State in which there is a State Board of Health.

In an endeavor to determine whether the original bill sponsored by the Tennessee State Association was contrary to existing conditions or trends in generally similar states, questionnaires were sent to the states of Oklahoma, Alabama, North Carolina, Mississippi, Georgia, Kentucky, Arkansas, Texas, West Virginia, Florida, Virginia, Louisiana, and South Carolina, seeking information on the following points:

- (1) Has your State a Board of Health?
- (2) What constitutes the membership of your board?
- (3) How is your Board of Health appointed?
- (4) How is your Commissioner of Health appointed?
- (5) What are the powers of your Board of Health?

Replies were received from twelve out of the thirteen states—only South Carolina not being heard from.

Of the twelve states from which replies were received, all except one—Oklahoma—had a State Board of Health.

An analysis of the composition of the boards of health reveals the following facts,

which show the unfairness of the criticism directed against the personnel of the bill approved by the State Medical Association:

In each of the eleven states having boards of health, doctors constitute a majority of the board—this being according to law in ten of the eleven, while in the other—Florida—the law governing the State Board of Health merely states that the board shall consist of three citizens to be appointed by the Governor. However, in this year, all three members of the Florida board are physicians.

Further study of the personnel of the boards reveals the fact that in five states—Alabama, Arkansas, Texas, West Virginia, and Florida—the entire membership consists of physicians; in one state, Mississippi, of eight doctors and one dentist; in one state, Georgia, of ten doctors, two dentists, and two pharmacists; in one state, Kentucky, of six doctors, one pharmacist, and one osteopath; in one state, North Carolina, of one dentist, one pharmacist, one educator, and six doctors; in one state, Virginia, four doctors, one dentist, and one male and female citizen; and in one state, Louisiana, of five doctors, one pharmacist, one dentist, and one educator.

It is also of interest to analyze the Boards of Health from the point of view of the number of states in which the different professions appear in the personnel of the Board of Health. In all eleven Boards of Health physicians not only appear but in every instance constitute numerically a definite majority of the board, while dentists appear on five of the boards, pharmacists on four boards, an educator on two boards, and only one board has a woman member.

The trend of thought in the different states toward the realization that physicians represent the all-important part of a Board of Health is further shown by the fact that in three states physicians constitute a larger quota of the board's personnel than actually required by law, i. e., North Carolina and Virginia, where the law provided for a minimum of four and two physicians, but at the present time the number of physicians sitting on these boards numbers six and four, respectively, while in the State of

Florida all three board members are physicians, though the law only stipulates the appointment of three citizens.

The method of appointment or election of the Boards of Health in the different states is also a matter of interest—in Alabama, the entire state board is elected by the State Medical Society. In North Carolina, five of the board of nine are elected by the State Medical Society and the State Dental Society, and the remaining four appointed by the Governor. In three states—Mississippi, Georgia, and Kentucky, the Board of Health is appointed by the Governor from nominees submitted to him by the respective Medical, Dental, Pharmaceutical, and other societies. In the seven remaining states, the members of the Board of Health are appointed by the Governor, though in one—Tennessee—apparently on the nomination or suggestion of the State Health Officer.

The State Health Officer in the various states is appointed as follows: In one—Alabama—by the State Medical Society; in five—Mississippi, Georgia, Kentucky, Texas, and Florida—by the State Board of Health; in two—Arkansas and North Carolina—by the State Board of Health subject to the approval of the Governor; and in four—Oklahoma, West Virginia, Virginia, and Louisiana—by the Governor.

All of the existing State Boards of Health with the exception of the so-called board in the State of Tennessee have full and absolute power to make and enforce all regulations of the department as well as determine its policies.

It has been the object of this paper to try and paint in words on the one hand the relation that now exists between the medical profession and the State Health Department, and on the other to place in your possession indisputable facts which serve the purpose of controverting most if not all of the criticism that during the past year was directed at our profession and its proposed health department legislation largely through the medium of the State Health Department. In doing this it has been necessary to speak plainly and bluntly and in certain instances bring into this article individuals by name. I can only regret that



their actions have necessitated this being done.

From the facts and figures that have been presented to you today no one, I think, can fail to see that there can be in the future no lasting peace between the State Health Department and the medical profession of the State until the present existing autocratic powers of the Health Department have been curbed and the medical profession is given its proper place in the control of the State Health Department activities such as has been shown to exist in the eleven other Southern States having a Board of Health. The responsibility for the attainment of this objective rests upon the individual membership of the State Association. No committee can by itself secure for you the needed reforms, but this can only be attained when each and every member of this Association is willing to assume his full responsibility in aiding the passage of whatever legislation your House of Delegates may adopt. You and I have a heritage which from generation to generation of doctors has been handed down to us. Though few if any of us may make discoveries in medicine that will affect the health of mankind or the methods of treatment used for his relief, yet we all have a sacred duty to our profession to perform—to so keep it in order and to work in its behalf that it may be handed down to the next generation undefiled and undamaged by the assaults of selfish, autocratic individuals and interests which are now so commonly seeking to inhibit our proper sphere of activity in the practice of medicine.

#### DISCUSSION

DR. E. R. ZEMP (Knoxville): Mr. President and Gentlemen: Who, after listening to that wonderful paper last night of Dr. Vaughn's relating the remarkable results that he had obtained in the district over which he presides, does not earnestly desire that such a state of affairs could exist in Tennessee? As you know, the secret of success of that movement depended entirely upon *cooperation* and not *antagonism*. It is hard to understand why the State of Tennessee should stand out by itself as the one state in the Union that needs only a commissioner of public health and not a board of public health.

The medical profession has always been altruistic, literally cutting its own feet from under

itself from time to time, making any sacrifice for the benefit of the community, but while we have no objections to being altruistic, we object seriously to the accent being on the "all."

It has been reported, especially in my district, that the medical profession of the state is trying to destroy the public health unit and the boards of public health. Any man who comes into your district and makes the statement that the medical profession is trying to abolish or destroy public health units is either a colossal liar or an intimidated officeholder. (Applause.) The medical profession does not want to destroy; its function is to build up and to restore those things that are good, not only for ourselves, but for the communities in which we live.

What business organization in this country, or in any other country, makes one man the sole czar and king of that organization, whose word is law, whose word is a command, and whose henchmen go out and obey his word without a murmur? Even if they have ideas of their own, they amount to nothing. The King of England has no such authority as that. You find that only in fascism and communism and all those "isms" that are abhorrent to the average American mind.

We need a commissioner of health. We have no fight on any individual. Our commissioner of health is a man well qualified for that position. I think we all grant that—*well* qualified—perhaps unusually so; but he is possessed of too much power, and any man who would be willing to assume such power has a colossal egotism which must far exceed his judgment.

He reminds me of the young lady who went riding for the first time with a young man, and her friend asked her the next day how she got along.

She said, "Well, he's all right. I let him hold my hands, but he wasn't satisfied with that; he wanted to shuffle the whole deck." (Laughter.)

It is up to you as individual physicians, when you go back to your homes, to create the right impression, that your community, that your profession, wants preventive medicine, wants public health units, wants a board of health, but it wants a board of health that will cooperate with those who know best what their community needs. Also it wants a cooperation that will not open wide the gates of diagnosis, treatment and all kinds of medical service to anybody, regardless of their financial status, and in that way take the work that rightfully belongs to us.

We are not altogether free from blame for the condition that exists. It is said that Nero fiddled while Rome was burning, and that is just about what the medical profession of Tennessee has been doing for the past ten years—fiddling along while the structure that provides for our maintenance and livelihood is gradually being taken away from us. It is time to do something; it is time to do something besides fiddle. If we are going to keep on fiddling, then let's change our name from the Tennessee State Medical Association to the Organization of Old-Time Fiddlers.

All we ask of the legislature is to pass a bill that will put the control of public health in the hands of those to whom it rightfully belongs—the medical profession—and the point that we insist upon is that we shall be represented on that board to the extent that we shall have a say-so in its management and shall control its policies. Surely this is not too much to ask when you think of the service that the medical profession of Tennessee has rendered to this state. But if you are satisfied with things as they now exist, then let's all adopt the uniform of the black shirts and give the royal salute to our chief. (Applause.)

DR. A. A. OLIVER (Paris): I want to repeat what Dr. Zemp has said, that we have a very competent Commissioner of Health in Tennessee; he is a diplomat, he is qualified, he is pleasing; there is no objection to him at all, but he is human. As has been stated by the previous speaker, we think he has too much power; in other words, the medical profession does not have enough power. It is not right and fair to vest all the power in one man. Sometimes the oldest son in a family of six or seven wants all the power. It is best to give it to all; let all bear responsibility.

The commissioner has a hard place to fill. As we have said many times before about the governors of the various states: if a man had to be the governor of a state and not be known to the world, not have it known to posterity and his family that he had been governor; if it did not go down in history, no one would accept the responsibility. I do not believe there is a man in the room today who would want to be commissioner of health if it were not to be known that he was commissioner of health; that he was doing something for his people or for the profession. As I have said, we all are human. This man has authority—too much authority.

We are all taxpayers in Tennessee. Some weeks ago we were having trouble down in my county. I want to apologize for being part-time health officer for the past twenty-five years—ever since I was twenty-three years old. In our county we do not make an apology to any county in the State of Tennessee. We have less than \$2,500 appropriation for health work in this county. This takes care of the jail, the county home, and all of the surgical work in the jail and the county home, buys medicines for jail and county home. We have about 28,000 people.

Our records show (I am sure the commissioner will bear me out in this statement) that there is not a county in the State of Tennessee that has as small appropriation as we have that can show as low a mortality rate and as low a rate of contagious diseases as we are showing today. What I am trying to explain is furnishing toxoid in counties where we have part-time health officers. The commissioner and the board have been very generous to us in the past; they have furnished us

quite a bit of serum, but recently we have not been furnished toxoid. Toxoid, to my mind, is much more essential to the counties than typhoid fever serum, because we are dealing with the infants.

I understand the appropriation has been cut. The appropriation should be more, but if we are taxpayers to the State of Tennessee and the full-time counties are taxpayers, it has not been made clear why we should not receive as much toxoid in proportion as the full-time county unit.

I called on the governor some weeks ago and asked him about it. He is a very fair gentleman, a friend of mine, I voted for him, but he said this: "Doctor, I know as little about the board of health as any department of the state. It has given me more trouble than any other department of the state." There is something wrong somewhere.

As I stated, the commissioner is all right; but back to the serum. I hope when you gentlemen go home, if you are in part-time counties, that you will look into it and take it before the next legislature.

The governor said: "Write me a letter and I will take it up with the commissioner of health."

I dictated the letter that day. In a few days he sent me a long letter in answer to it from the commissioner of health to him. He went into detail as to why he would not furnish the part-time counties toxoid, but he would the full-time counties.

I had stated that we were taxpayers, but he answered in substance this: "We are furnishing to the full-time county unit toxoid; that comes out of the budget." But as I understand it, they have been over in my county trying to organize a full-time unit for the past eight years, possibly longer, and it never has been explained satisfactorily to us. If we will give \$4,500 the state will put in \$4,500. Now, if the state can give us \$4,500 for a full-time unit over there, and then can't furnish us toxoid, let them keep the \$4,500, which they are doing anyway. We have the men who are capable of giving it and will give it; we just need material. A part-time health officer cannot buy toxoid and administer it gratis all over the country, furnish transportation, nurses and everything, with an appropriation of \$2,500 a year.

We are average taxpayers; we are an average county in Tennessee. If you will pardon me, I believe in local option to a certain extent, and as to qualifications for a county full-time health officer, our county has furnished you three governors, and I believe if we are capable of furnishing the governors of the State, the men who have been practicing medicine in our county for years should have the control of the county. As I understand the department of health now, you and I, although we finished in a Class A school, although we are qualified to treat the preacher's wife with pneumonia and typhoid fever and do major operations, we are not competent to be health officers; we must have special training.



I want to make just this point, if I can. You might as well say we should organize today to have special training for a man to be a railroad surgeon, and remove Dr. Eve because he is past the age limit; Dr. Burch, Dr. Burns, or others. If you have been practicing medicine fifteen, twenty, or twenty-five years, and are capable and licensed by your state, why is it that a school-teacher from Ohio or Indiana should be taken in who can get through the special health office training in thirty-six months and thirty-six days and then is considered competent to be a health officer and is paid more money than the average physicians in the small counties and rural districts who have been practicing medicine for twenty years?

I think the medical profession should have control of this work. It should be handled by the medical associations of each county, with due respect to the governor, to the board, and to the commissioner.

DR. OLIVER HILL (Knoxville): Someone remarked that we were partly to blame ourselves. I want to ask a direct, fair question of the gentlemen here. Every man who did vote for his legislator and for the governor last time hold up his hand—every man who voted or took an active part in politics. That is a very small minority.

Our government, as you know, is divided into three parts: the executive, the judicial, and the legislative branches. Whether we like it or not, it is the government we have got to live under in our state, in our nation, in our counties, in our municipalities. What we get from this is what we ask for. Every other body of business—grocery men, dry goods merchants, what-not—has a legislative organization made up of men particularly fitted to see that their interests are properly cared for. We don't express ourselves, and yet we complain to the legislative body and executive body that has nothing to do except execute the laws passed by the legislative body. We get what we deserve. We must make ourselves felt as a political power in medicine, in health. We are better judges, better qualified to decide what is best for the health of the people, so it is up to us to do what we think is best for the commonwealth, and to do that we must express ourselves at the polls, exercise our suffrage, send legislative representatives from our counties that will be receptive to us.

The difficulty last time was that we were absolutely outclassed in politics. Our political acumen was sad in comparison to what the opposition had down there. I have no objection to Dr. Bishop. I am very fond of him personally. I think he should be continued; but if we want to do anything we must get back to work, not pass resolutions and argue—but work, exercise our suffrage, and put it over as any intelligent body of men would do.

DR. L. C. JOHNSON (Woodstock): May I ask the gentleman what county he is from?

DR. HILL: Knox.

DR. JOHNSON: I am from Shelby. I have

listened with a great deal of interest to the paper which has just been read and to the discussion which has followed. This now seems to be revolving around a legislative question. Having had some few years in a legislative capacity, I want to tell you this: If you expect to get a bill through the legislature that will protect your interest and my interest you had better make the race for the legislature. You remember that Tennessee is largely controlled by political machinery. The powers that now exist in Shelby County have harnessed everything from the Wednesday evening prayer meeting to the Baptist association, and this is almost true of the state; they have made the Parent-Teachers' Association a cog in the political wheel; they have got their chairmen to look after the public health in the communities, and many of them attempt to dictate and call the doctor who shall practice in their schools. Think of that for a minute. I tell you the halter has been prepared for us, and our objections have not been heard. That was well demonstrated when they failed to give us this board, and placed the entire power in the hands of a commissioner. Too much authority for any one man to exercise.

Let's look at the lawyers of our state. What happened a few days ago in Memphis? One of our judges died (and a very splendid jurist he was) and the bar association met and endorsed the man they wanted, and immediately the appointment came back from the governor. Why can't we exercise that power? I feel, ladies and gentlemen, that we have been discriminated against in not having this board with power imposed in it to dictate the policies of this association.

A few years ago I happened to be in Nashville while the state legislature was in session. I advocated legislation that would prevent ignorant negro women from going and doing deliveries. There was one doctor in the house who felt as I did about this matter. They didn't give him a show whatever. In 1928 or '29, I believe, there were 1,100 deaths in the State of Tennessee due to direct infection from negro women doing midwifery, and 900 dead and blind children in proportion. They are doing it even in white homes. It is a terrible thing and a disgrace. And yet some county nurses and health workers encourage it in a way. They tell us down in Shelby County that we can't prosecute one of those women for going out and doing deliveries. I was taught obstetrics as one of the most important branches of medicine. I had to stand an examination on obstetrics and had to pass it; yet these dirty, ignorant negroes are going out all over the state and doing that kind of practice, and when you call attention to the health authorities, they tell us there is no law. They have become so self-important that at least one negro woman has signed several death certificates in Shelby County, and has not yet been indicted.

O politics! Thou art a jewel!

DR. J. O. MANIER (closing): Having written a paper that is somewhat blunt, I want to go on record in this sense, not of modifying what I have said, but rather in standing foursquare on this principle, which I know every one here does: that we are intensely interested in public health, and that while I may have disagreed and do disagree very frankly with some of the policies, as I have stated in this paper, those things do not in any sense, as Dr. Zemp said, reflect back on the ability of the present commissioner of health. I have considerable admiration for his ability.

You listened yesterday to Dr. Leland tell you what the dangers were that confronted the profession of medicine. He told you how certain organizations were beginning to regiment the profession and how in certain states health departments were being subsidized. If we wish to be safe from those things, we have got to adopt measures to prevent them from occurring.

Your House of Delegates today adopted a tentative legislative bill for the reorganization of the State Department of Public Health. It is in effect the same bill that existed in the last legislative session—a board composed of six doctors, one dentist, one pharmacist, and one woman member, to be appointed by the governor from nominees submitted by the respective organizations. It gives to that board the power which a board of health should have, to formulate all regulations and policies of the department. To show that we have no desire to supplant anybody in the public health department, studiedly in that bill is given to the governor the power to appoint the commissioner of health.

As I see the matter, we want control of the department of health, and we want that control to come through a majority membership that is nominated by this body. We should not and do not want to appoint a commissioner of health. We might even defeat our own objective if we did, if

we got the wrong person. If we are to do this, between now and the August primary is the time it will have to be done.

Your House of Delegates accepted the recommendation of the board of trustees setting up a machinery from the standpoint of having a committee of nine men, three from each grand division of the state, appointed, whose function it should be to go back to each and every county organization in their division of the state, take this bill to the county societies, explain and discuss that matter with the county societies, and then secure the adoption or approval of the county societies and find out what members of each society will assume the responsibility of contacting potential legislators on this bill, with the idea that in gathering that kind of information it can be forwarded to the central office in Nashville and there a card index system can be set up on each potential legislator as to just where he stands and to whom he pledged his support, if he does pledge his support. Then, when the legislative session comes, if any legislators see fit to weaken on their promises, we are in a far better position to summon help from over the state to assist us in really putting over our projected legislation.

If, as Dr. Leland said yesterday, the parent body, the A. M. A., is studying these situations and realizes exactly the danger that confronts the profession, and that that danger can only be controverted by, first, individual doctors studying problems that might arise in this way, and, second, for the component societies or units of the organization, coming down through the state society and into the counties, to study these things and to take proper action on them, we in Tennessee cannot hope to be of any help to such a move until first we set up the proper machinery in our own back yard to be able to function. We cannot expect to be of any help to such a move unless we have already cleaned up our own local situation at home.



## CANCER OF THE UTERUS AND THE CERVIX: IS IT CURABLE?\*

LUCIUS E. BURCH, M.D., Nashville

CANCER is the most outstanding problem that confronts our profession today. All cases of cancer of the uterus die unless relieved by the medical profession. In 1930, more than 115,000 died of carcinoma, approximately one in each eleven or twelve deaths for that year. Of those women who reach the age of 35, it is estimated that one out of seven to eight dies of cancer. Of this number, cancer of the genital organs is the predominating aetiological factor. It is thought that cancer is on the increase. Authentic cases of carcinoma have been reported in the newborn and in children under two years of age. Cancer ranked sixth as the cause of death in 1900 and rose to second place in 1930.

There is a general impression among the laity that cancer is an incurable disease. Many people are of the opinion that it is hereditary, and the majority of the public look on it as a disease that is disgraceful to acquire and should be spoken of in a whisper. Many members of our profession look on it as incurable, and in this way encourage the public in its pessimistic outlook on the final outcome of the disease. The symposium on the curability of cancer at the 1932 meeting of the American College of Surgeons has done much to impress the profession, and indirectly the public, that carcinoma is curable by the use of the established methods of treatment. At this symposium 8,840 cases cured of cancer were reported, and at the 1933 meeting the number was increased to 12,746. This should be undisputable evidence to our profession as a whole that cancer is a curable disease, provided it is recognized sufficiently early. It is our beholden duty to create a different psychology among the laity and discourage the feeling of pessimism and to create one of optimism. I will make no attempt in

this paper to present our final results. This is being worked out by the social service department of Vanderbilt Hospital and will be the subject of a special paper.

Three methods of treatment are now used: operation, X-ray therapy, and radium. In many cases all three are used jointly, in others radium and X-ray in sequence.

My longest cure of cancer of the cervix was that of Mrs. K. C. The biopsy was confirmed at the old Vanderbilt Hospital. She was operated on at the age of 59, and died in July, 1932, at the age of 76, from cardiorenal disease. She lived seventeen years after operation to a ripe old age, cancer cured.

One of my most unhopd-for cases of cure is of more recent date. Miss R. O., a school-teacher, was referred to me for treatment. The biopsy showed sarcoma of the uterus. She was operated on June 30, 1928, at the age of 26. This young woman has made a five-year cure and is now in the best of health and is following her occupation as teacher.

A most unlooked-for cure was the following: Mrs. M. S., age 55, entered Vanderbilt University Hospital in 1928, with chief complaint of bloody vaginal discharge of six months' duration. Biopsy showed adenocarcinoma. There was a stricture of the vagina at the junction of upper and middle thirds from senile vaginitis; this was dilated and it was discovered that the cervix contained a large carter, some involvement of vagina posterior to cervix and thickening in base of each broad ligament. She had both radium and deep X-ray treatment. Over five years have elapsed, and the cervix, while shortened, is normal in appearance, the surrounding vaginal walls and the broad ligaments are free. A case of this character is rightly looked on as hopeless in the majority of cases, and yet this woman has made a cancer cure of over five years and is enjoying good health with the excep-

\*Read before the Nashville Academy of Medicine, October, 1933.

tion of diabetes, which she controls by diet. She also has a skin eruption from over X-ray exposure.

Mrs. J. D. was operated on for cancer of cervix at age of 49. The biopsy diagnosis was epithelioma. It is now thirteen years since operation and she is in the best of health.

Mrs. K. W. of Donelson, at the age of 67, was examined on account of a bloody discharge from the vagina. The cervix and vagina were normal. A biopsy from the uterus obtained by D. & C. showed adenocarcinoma of the body of the uterus. A vaginal hysterectomy was carried out under sacral anesthesia. This old lady today, eleven years since the discovery of her cancer, is enjoying splendid health and with no sign of recurrence.

The following case is one in which I would have made an egregious and perhaps fatal error if I had not been checked up by the laboratory. Mrs. B. P., at the age of 52, was referred to me. She was having irregular uterine bleeding. An examination showed the cervix and vagina normal in appearance. The uterus, however, was enlarged to a two and one-half months' pregnancy due to presence of a fibroid tumor. A diagnosis of myofibroma was made and radium was advised and accepted by patient. A routine D. & C. was made before the radium was inserted and she was given 2400 hours of radium and the patient assured that the fibroid would give no further trouble. Much to our chagrin, the biopsy report showed adenocarcinoma of the body of the uterus. I then had to change my diagnosis and inform the family of the true status of the case. Patient was given X-ray treatment, and in due time this was followed by complete hysterectomy. An examination of specimen still showed presence of cancer in spite of X-ray and radium treatment before operation. This case is not reported as a cure, for only three years have elapsed. It shows two important points: first, that a biopsy should always be made when radium is used for the relief of what appears to be an innocent condition; and, second, it emphasizes the well-known fact that carcinoma of the body of

the uterus is radio-resistant and that operation is the procedure of choice in conditions of this kind.

The following case well illustrates what can be done in a palliative way and the avoidance of a distressing sequelae in the form of a vesicovaginal fistulae. Mrs. S. of Silver Point was brought to me. Her chief complaint was bloody vaginal discharge of four months' duration and frequency and painful urination of two months. Examination showed an ulceration on anterior vaginal wall the size of a half-dollar with quite a deep crater in the center which was directly over base of bladder. The upper vagina, cervix and uterus were normal. Biopsy showed cancer. The case was one of primary carcinoma of anterior vaginal wall, almost extending into bladder. It presented some interesting problems. Operation was out of the question—it could not be reached with X-ray, and radium would have produced a vesicovaginal fistula. The problem was solved by the use of radium emanation needles. Much to our relief, a fistula did not form, the ulcer was completely healed in two months' time, and the bladder symptoms have disappeared. Time alone can tell what the ultimate outcome of the case will be.

The symptoms of carcinoma are insidious in character and typical of the disease. It begins as an increased vaginal discharge, first watery in character; this is followed by spotting coming on at irregular intervals and then a gradual increase in the amount of blood. Unfortunately, most women pay but little attention to an increased vaginal discharge that is watery or leukorrheal in character, and spotting is thought by many women to be a temporary condition brought on by a strain. It is at this time that the disease is curable, and until the laity realize the meaning of these symptoms and apply for treatment, many unnecessary deaths will occur. A biopsy should be made of any suspicious areas on the cervix, and if cancer of the body is suspected a dilatation and curettement should be carried out. Dr. John C. Burch has devised a very useful and simple instrument for obtaining biopsies from the body of the



uterus. It is an office procedure, and we have found it not only useful in malignant cases, but also in the study of the hyperplasias. We are of the opinion that Schillers' test is of value in detecting the clinically latent cancer of the cervix. Quoting from Graves' article in *S. G. O.*, February, 1933: "The test is based on the discovery by Lahm that the upper layers of the normal epithelium of the portio and vagina contain rich masses of glycogen which disappear when the epithelium becomes cornified or changed by cancer. In the normal living tissue the glycogen of the upper layer of cells is stained in a few seconds, a deep mahogany brown, by iodine in watery solution (Lugols). A superficial area of early cancer, being devoid of glycogen, does not receive the stain and stands out startlingly white or pink against the deeply colored, almost black, background of the normal tissue." There are several conditions that obscure the test—erosion and eversion do not take the stain, as they are devoid of epithelium. Slight trauma, as rubbing the parts with gauze or the use of tenaculum forceps, prevents the stain, and should be avoided. No case should be diagnosed or treated until the laboratory confirms the diagnosis. Radium is the sheet anchor in the treatment of cancer of the cervix. It is our custom to give 4800 to 5000 milligram hours. This is followed in eight to ten weeks' time by deep X-ray therapy. In some cases we first use deep X-ray therapy and later on radium. The colposcope is of value in making a diagnosis in early cases, but is not in general use on account of the expense.

Patients who are of low vitality and with unhealthy condition of the cervix and the surrounding parts, associated with a low sedimentation time, would influence us toward using X-ray first and radium after the local and general condition has im-

proved. Radium is a most powerful therapeutic agent, but if used improperly or at the wrong time, is an agent that may cause great injury or even death. We place great reliance on the sedimentation time, and when below 50 minutes we prefer X-ray first. About one-third of our cancer cases are transfused one or more times before using any form of therapy. The paraphernalia used in giving radium at the present time consists of an intrauterine applicator, a bomb for the purpose of radiating the vaginal aspect of the cervix, and a self-retaining colpostat for radiating the base of each broad ligament. The screening consists of 70 per cent platinum and 30 per cent iridium, giving an apparent filtration of approximately 2.5 mm. of platinum. Radium sickness is infrequent, and if present is not so marked as with brass and rubber screening, which we previously used. Operation is reserved for the early cases where the disease is limited to the cervix, the uterus movable and the broad ligaments free. Unfortunately, only about 5 per cent of our cases of cancer of the cervix come to us sufficiently early for operation. The operation we use is the radical Wertheim abdominal hysterectomy, and in addition the removal of the upper fourth of the vagina. Cancer of the body of the uterus is radio-resistant, and for this reason nearly all cases are operated on. Many of these cases are in advanced life and are poor operative risks. We prefer, in this class of cases, vaginal hysterectomy and, if possible, local or sacral anesthesia. In conclusion, I desire to emphasize, first, cancer of the cervix and body of the uterus are curable, provided the diagnosis is made sufficiently early; second, every woman who has an abnormal discharge, either bloody, leukorrheal, or watery, is entitled to a careful pelvic examination.

CONGENITAL MALFORMATIONS OF THE ESOPHAGUS WITH  
REPORT OF A CASE\*

BEULAH M. KITTRELL, M.D., Knoxville

CONGENITAL malformations of the esophagus are conditions of such rare occurrence that the majority of textbooks dismiss them with the mere statement that they are known to occur.

In a review of the literature on such anomalies, I find that up through November, 1931, only two hundred fifty-five cases have been reported. The earliest recorded case was by Durston in 1670.

The rarity of occurrence is no doubt exaggerated, there being many cases not reported and still more that are undiagnosed. They are as a rule incompatible with life and are of interest only from the standpoint of etiology, diagnosis and prognosis.

The following case is reported with X-ray and post-mortem findings:

Female infant, born September 18, 1932, after labor lasting thirty-six hours. The mother had placenta previa marginalis and child was carried to term with difficulty. Delivery was by low forceps due to uterine inertia. Baby cried spontaneously and appeared normal in every way except for bilateral equino valgus and row of fine hairs about one-fourth inch long on margin of both pinnae. Weight was six pounds. The mother was thirty-eight years old and had four normal children, the eldest being eighteen years old and the youngest eight. There is no history of deformities on either maternal or paternal side.

From birth the baby had a large amount of mucus in the nose and throat. All feedings and water were regurgitated.

I was called on the fourth morning, and except for the abnormalities mentioned above, found a normal, healthy-looking baby. Temperature was 100; weight was five pounds nine ounces. Child did not look especially dehydrated. The positive physical findings were as follows:

1. Hairs on pinnae.

2. Large amount of tenacious mucus covering posterior pharynx.

3. Diminution expansion right upper chest with absence of breath sounds down to upper border of third rib.

4. Bilateral equino valgus.

After examination, baby was taken to breast. She nursed greedily for five to ten minutes, then choked—became cyanotic, and milk and mucus poured from mouth and nostrils. Each successive attempt at nursing resulted in the same series of events. There was no retching at any time; meconium and urine were passed freely.

An unsuccessful attempt was made to pass a small rubber catheter, there being an obstruction about the middle third of the esophagus.

X-ray examination was made following ingestion of barium and revealed the following:

Barium mixture passed about one inch below the suprasternal notch, filling the upper esophagus, it being larger than normal with smooth rounded lower limits evidently due to a complete obstruction at this point. Apex of right lung does not contain air—small amount of barium aspirated into right and left main bronchus—gas bubbles in stomach and intestines.

A gastrostomy was done under local anesthesia. The child expired five hours later, due to shock. Post-mortem examination as follows:

Body that of a well-developed and well-nourished female infant apparently about full term. There was a row of fine hairs on margins of both pinnae approximately one-fourth inch long; both feet are club-shaped; the umbilical cord contains ligature.

There was a surgical incision into the stomach in which a rubber drain was inserted. The skin showed no eruptions, and externally there were no abnormalities noted.

\*Read before the Knox County Medical Society, 1934.



On opening the thorax, both lungs collapsed. There was no free fluid and no adhesions. The thymus was normal in size. There appeared to be an absence of the esophagus in the upper half.

The lungs and esophagus were removed together, and on dissection there was found to be an absence of the esophagus in the upper one-half, the lower portion being a direct continuation of the trachae. One inch above the junction of these two, there was on the right side a diverticulum about the size of a walnut, the contents of which consisted of barium and a small amount of undigested milk. The lungs were normal in size and shape, and on opening these the cut surface showed near both hiluses a small amount of a white semifluid which resembled barium. No other abnormalities were found. All other organs were normal.

Various theories to explain malformations of the esophagus have been advanced.

Among these are:

1. Mackenzie suggested some deformity of the sperm or ovum. He is cited as having encountered a father, all of whose children by three wives had the deformity. This certainly points to a genetic basis.

2. Klebs: An unequal diversion of primitive tissue, too much of the original formative tissue being used up in the development of the trachae, bronchi and lungs, so that atresia of the esophagus results.

3. Kranse: Abnormally large adjacent vessels, which exerted pressure on the esophagus.

4. Trenter: An arrest of development.

5. Lushka: Fetal inflammation or uterine trauma.

Types of malformations are as follows:

1. Complete absence of the esophagus.
2. Doubling of the esophagus.
3. Esophagotracheal fistulae.
4. Partial obliteration of esophagus.
5. Diverticulum formation.
6. Simple congenital strictures.

7. Membranous or valve-like structures.

8. Cysts.

The most tenable theory as to the causes of these malformations is based on arrests, or disturbances, in development of the anlage of the esophagus and trachae. Both have their origins in the primitive fore-gut, being in the beginning single structures. Separation takes place during the third or fourth week of fetal life by the growth of two lateral septa, which eventually meet and fuse in the mid line to form a partition from which is differentiated the posterior wall of the trachae and the anterior wall of the esophagus. Disturbances in development during this period may produce any of the formations mentioned above.

The diagnosis of these cases is not difficult. As a rule they are associated with some other malformation. Regurgitation of food and accumulated mucus is constant, accompanied by suffocative attacks and cyanosis. Undoubtedly some of the unexplained cases of vomiting followed by death within one or two weeks are due to malformations of the esophagus. It is important to remember that there is no retching; the infant seems to roll the milk and mucus out of his mouth with his tongue.

The prognosis is of course hopeless. In the majority of cases, as in the one reported, gastrostomy is done. Death inevitably occurs from shock, hemorrhage, or aspiration pneumonia.

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## PROFESSOR ELSCHNIG'S SURGICAL CLINIC IN MEMPHIS FOLLOW-UP REPORT ON OPERATED CASES\*

PHIL M. LEWIS, M.D., R. O. RYCHENER, M.D., AND M. B. SELIGSTEIN, M.D.,\*\* Memphis

**D**URING Professor Elschmig's visit to Memphis in February, 1934, he conducted a surgical clinic at two of our local hospitals. It was thought by us that those who were so fortunate as to witness the skill of that great master would be interested in a follow-up report of the cases. Also we hoped that those here for this meeting, who did not attend the Elschmig Clinic, would enjoy hearing a brief resume of his methods and results.

Professor Elschmig operated upon a total of 19 eyes in 18 patients. All were intraocular operations and performed on February 10, 11, and 12. Ten were cataract extractions. Six cyclodialyses for glaucoma. One, an iridectomy for old plastic iritis, and two discissions for secondary cataracts. We purposely omit from this paper further mention of cases other than those of cataract extraction and cyclodialysis, as there was nothing of particular interest in the iridectomy or discission cases.

For a complete description of Professor Elschmig's methods of preparation of patients and for details on his operation for cataract, the reader is referred to the account by King, in the Archives of Ophthalmology, Vol. 9, No. 2, February, 1933. However, we will mention a few things which seemed to us important.

Preparation of patient—(1) Venesection was recommended one hour before operation for any patient with a blood pressure above 160 mm.Hg.

(2) Retrobulbar injection with 2 per cent novocaine was given in every case to insure complete anesthesia. This was followed by firm digital compression of the globe for a few moments to prevent hemorrhage. Akinesia was of course induced in every case.

(3) For all cataract cases a bridle suture

of silk was placed through the anterior extremity of the superior rectus, this suture being controlled by the assistant, who at the same time held the lids apart with Desmarres' lid retractors.

(4) The pupil in cataract cases was dilated one hour before operation by 1 per cent homatropine rather than atropine, in order that eserine might act effectually postoperatively.

A few other points of interest are as follows:

(1) The operations were performed with the patient reclining at an angle of 45 degrees, the Professor standing in front, on the right side for the right eye and on the left side for the left eye.

(2) A conjunctival flap was cut with the Grafe knife in every cataract case, and from two to three sutures placed before delivery of the lens.

(3) Simple extraction with a minute peripheral iridotomy was the routine procedure.

(4) Removal of the lens in capsule was attempted in every case and was unsuccessful only in three, one of whom was a very unruly patient. The lens was tumbled in every case.

(5) Eserine 1 per cent was employed routinely, both in cataracts and glaucoma as soon as the sutures were tied, in order to draw the iris away from the wound. All wounds were touched immediately after operation with 5 per cent tincture of iodine.

### CASE REPORTS

#### CATARACT EXTRACTIONS

1. J. S., white, male, age 81. Immature nuclear cataract. Blood pressure 205/80. Venesection 200 cc. one hour before operation. Intracapsular extraction without loss of vitreous. Peripheral iridectomy with knife on section. Practically no reaction followed operation. Externally a beautiful eye. Refracted five weeks after operation,

\*Read before the Tennessee Academy of Ophthalmology and Otolaryngology.

\*\*From Department of Ophthalmology, University of Tennessee, and the Memphis Eye, Ear, Nose and Throat Hospital.



but no lens improved. Numerous vitreous opacities. Asteroid hyalitis. Lower portion of vitreous filled with what was apparently a proliferating retinitis. The projection of light on this man before operation was a bit doubtful.

2. J. G., negro, male, age 71. Immature senile cataract. Intracapsular simple extraction with peripheral iridotomy. No loss of vitreous. Slight reaction. Pupil slightly oval and eccentric, due to the periphery of the iris being caught in the wound at one o'clock. Refraction four weeks after operation but no lens improved due to an old central chorioretinitis, with huge clumps of dense black pigment in and around the macula region.

3. W. T., negro, male, age 70. Immature senile cataract. Intracapsular extraction. Complete iridectomy performed as man was an unruly patient. No loss of vitreous. Sutures removed with difficulty on fifth day, followed by hemorrhage into anterior chamber. Considerable reaction.

February 23. Still some blood on surface of vitreous and ciliary injection persisted.

March 23. Refraction, but no lens improved. Vitreous opacities so large and numerous fundus could not be seen. K. I. internally.

4. M. J., negro, female, age 50. Mature cataract and glaucoma. Tension 30. Intracapsular extraction with iridotomy. No vitreous loss. Uneventful convalescence. Patient so deficient mentally visual acuity could not be determined. Apparently very good.

5. M. M., negro, female, age 60. Mature cataract. Combined extracapsular extraction. Patient very unruly; had to be held down by three assistants during operation. Due to this an iridectomy was performed. Capsule tore and cortical matter was removed with spoon. No loss of vitreous. Anterior chamber reformed on February 13; some cortex in chamber. On February 28 there was some hyphema present with more swollen cortex apparent, which persisted on March 9. Pupil drawn up, as iris pillars were caught in wound. Further operation will be necessary to obtain any visual result.

6. H. E., negro, male, age 26. Traumatic

cataract of three months' duration. Tension 20. Linear extraction. Keratome incision, cortex removed by suction and spoon. Some cortex remained. No vitreous loss. No reaction. Some cortex still present on February 15. Discission four weeks later. Refraction.  $+ 10 \text{ sph.} + 3.50 \text{ cyl.} \times 55 = 20 \text{ 30.}$

7. J. R., white, male, age 74. Mature senile cataract. Intracapsular simple extraction with iridotomy, three conjunctival sutures.

February 13. Eye clean, pupil small and round. Iris free.

February 16. Stitches removed with great difficulty.

March 29. Refracted.  $+ 9.50 + 2 \times 180 = 20 \text{ 20.}$  With  $+ 3 \text{ add} = \text{J.I.}$  Perfect eye.

8. W. L., white, male, age 69. Immature cataract. Vision 20/100. Tension normal. Asthmatic. Simple extracapsular extraction. Capsule tore as lens entered wound. Iris replaced, removed lens cortex with suction and lens curettes, sutures tied. No vitreous loss.

February 13. Wound clean and flat, iris free, pupil round and central.

February 16. One stitch removed; patient squeezed eye, causing conjunctival hemorrhage which filled anterior chamber.

February 28. Blood slowly disappeared; some cortex in pupil.

March 9. Reaction subsiding, but secondary membrane present.

March 26. Discission performed. Eye apparently will be very satisfactory.

9. W. C., white, male, age 78. Mature senile cataract. Vision P.L. Tension normal. Intracapsular extraction after iridotomy, iris carefully replaced, sutures tied.

February 13. Wound clean and flat, shallow chamber. Very slight reaction. Pupil small and round.

February 16. Stitches out with difficulty.

February 28. No reaction; tension normal.

March 27. Refracted.  $+ 9 \text{ sph.} + 3 \text{ cyl.} \times 180 = 20 \text{ 50.}$

10. H. D., white, male, age 65. Mature cataract. Extracapsular extraction. Iridotomy up. Capsule forceps included part

of iris below. Capsule tore. Most of lens and entire iris was delivered in the capsule forceps. Milked cornea to expel blood in anterior chamber and hyaloid membrane ruptured, with moderate vitreous loss. Sutures tied.

February 13. Wound clean and flat. Some cortex in anterior chamber and also capsular remnants. No vestige of iris remained.

February 16. Stitches out.

February 28. Some cortex persisted; tension normal.

March 27. Refracted. + 10 sph. = 20 200. Secondary membrane. Discission needed.

#### CYCLODIALYSES

1. G. W., negro, male, age 60. Chronic simple glaucoma. Vision before operation recorded as light perception only. No previous operations or treatment. Cupping and atrophy of discs very marked. Tension 40 mm.Hg. (Schiotz) O.U. Cyclodialysis bilateral. Conjunctival incision parallel to limbus and 10 mm. from it, down and out between the external and inferior recti. Flap separated and turned back toward limbus. Incision through sclera, with ordinary sharp scalpel, 6 or 7 mm. from limbus and parallel to it. Cyclodialysis spatula inserted, between the sclera and choroid and ciliary body, well into the anterior chamber. Spatula then swung both upwards and downwards so as to separate the uvea from the sclera over one-third of entire attachment of the ciliary body. Conjunctiva sutured and eserine instilled. Pilocarpine 2 per cent daily when dressed for five days. Reaction moderate. Some hyphema.

February 23. Tension very good to fingers. Pilocarpine 1 per cent at night only.

March 9. T 19 O.U. V. = H.M.

March 23. T 18 O.U. Vision actually a little improved.

2. C. C., negro, female, age 57. Chronic simple glaucoma. Trephine operation of both eyes had been performed previously, but in spite of fair filtration blebs the ten-

sion of the left eye was still elevated. Cyclodialysis left eye. Considerable postoperative reaction. Iritis with adhesions to lens capsule so that miotics had to be discontinued and atropine used. Foreign protein injections given. Tension remained within normal limits in spite of reaction.

March 2. When last seen, all inflammation subsided. Tension normal.

3. W. H. S., white, male, age 65. Chronic simple glaucoma O.D. Absolute glaucoma O.S. O.D. trephine operation in 1932. Cataract extraction in 1933. Vision remained fair, but tension increased gradually to between 20 and 35 mm.Hg. Disc badly cupped and atrophic. Cyclodialysis O.D. Slight reaction and no complications. Tension now remains between 16 and 20 mm.Hg. without use of miotics. Vision with proper lens 15 50-2.

4. I. G., negro, male, age 55. Chronic glaucoma with total blindness. Tension 30 mm.Hg. Cyclodialysis. Tension lowered on leaving hospital. Not seen again.

5. L. S., negro, female, age 60. Chronic simple glaucoma. Vision 20 25. Tension 40. Marked cupping of disc and contraction of nasal field. Cyclodialysis. Did nicely postoperatively.

February 28. T.25.

March 27. T.15. Eye quiet.

#### SUMMARY

Ten cataract extractions and five cyclodialyses were performed. It is still too early to state with finality the results in all of these cases. A low percentage of the cataract cases have good vision, but in only one case (No. 10) could the poor result be possibly charged to the operation. The poor vision was due to the fact that these cases were selected not with the idea of making a good report, but to furnish material for demonstration. Most of the eyes showed very little postoperative reaction. Vitreous loss occurred in only one case.

The cases of cyclodialysis have done well, all being in good condition at this date.



## SOME CAUSES OF PROFESSIONAL UNREST\*

DR. R. G. LELAND,\*\* Chicago, Illinois

Mr. President, Mr. Secretary, Members of the Tennessee State Medical Association, Ladies and Gentlemen:

I greatly appreciate the courtesy which you have extended me in inviting me to come here and discuss with you for a few minutes the subject on your program: Some Causes of Professional Unrest.

Causes of professional unrest are not of recent origin. Many years ago the medical profession was aware of sinister influences which were affecting various types of medical practice, such things as commercialism, as political interference, as the increasing domination by statutory medical service provisions and the expansion of lay interests in and control of certain medical services, and in these respects I refer specifically to contract practice, to the political interference and domination of health departments, to the provisions in the various parts of the United States, in forty-four states particularly, of workmen's compensation, and to the increasing interest of certain foundations in the practice of medicine.

For many years, then, these sinister influences were developing along various lines to different degrees in different parts of the country, and then we found that during those years in which the practice of medicine was fairly easy, the medical profession probably paid a little too slight attention to that phase of medical practice known as medical economics. Perhaps it can be explained in many ways, but by tradition, by training and by experience the medical profession has for years, for centuries, been devoted to the scientific practice of medicine. The economic phase has been incidental and has received much less attention than it deserved.

Then came the crash, with which you are all familiar, and the effect upon the medical profession individually is very hard to estimate because we have no accurate data to show us the actual, specific effect upon the individual physician's income. We do know that in many places there have been physicians in the bread lines. I know of instances in Chicago in which physicians have been taken care of in the shelters and have done a certain amount of work for those individuals who were sheltered under some sort of relief. We have had reports from various parts of the country that physicians were under relief care. Be that as it may, since that time, over the past four or five years a number of things have transpired to in-

crease the professional unrest which had its origin years ago.

There has been in the last few years a very marked awakening of interest in medical economics. There was a time when it was considered unethical to discuss medical economic subjects in medical society meetings. To be sure, these subjects were discussed in the hospital dressing rooms, in private offices, in small groups outside the medical society, and then it became apparent that it was necessary that the medical profession, because of the very marked interest of other people in the medical profession's business, take some initiative, do something about this thing which we call medical economics, perhaps the business side of the practice of medicine, but at any rate those things which are very necessary to every physician in his daily livelihood, in the provision for the welfare of his family, in his own professional advancement, and in providing something, at least, for those declining years, and therefore throughout the country there has developed a very marked interest in medical economics.

This interest has taken the form of the appointment of committees of state medical societies, committees of county medical societies, for the study of medical economic subjects and for whatever adjustment seemed proper for the various phases which were troublesome in those localities.

During these last few years there has also been a demonstration of the necessity for careful study of medical economic subjects and medical problems. The time is not too far distant for you to remember something of the work of the Committee on the Costs of Medical Care. This committee, let it be said, studied medical economics perhaps more extensively than any other group that had thus far been organized. But at the same time let it be also understood that that committee failed to study some of the most important phases of medical economics, and it has remained for the medical profession itself to study those subjects, namely: The Committee on the Costs of Medical Care failed to study workmen's compensation, the largest business in the practice of medicine in these United States; the Committee on the Costs of Medical Care failed to study health insurance. The health insurance study which was made was made by the American Academy of Dentistry and not the Committee on the Costs of Medical Care. The Committee on the Costs of Medical Care failed to study thoroughly contract practice, another of the very large phases of medical practice in this country. The committee also glossed over in a very minor fashion group practice, university and college student health service, and a number of other things that I might mention. Therefore, it remains for the medical profession itself to make its own

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\*\*Director, Bureau of Medical Economics, American Medical Association.

studies and to draw its own conclusions and to place into operation those recommendations which it believes are best for the interest of the public as well as of the medical profession.

There have been emphasized during the last few years as never before the problems which are connected with the various new proposals for the payment of medical service. Now these are not new things. In contract practice in various parts of this country there have been in operation for many years schemes for the administration of medical service on the money payment plan. But perhaps by the increased activity prompted by the Committee on the Costs of Medical Care, perhaps urged by the necessity of the times, there have been many groups that have proposed various schemes for the administration of medical care on the prepayment plan, to the extent that in the office in Chicago I have a record of more than 700 of these schemes that are either operating now or have merely been proposed. Some of them are fairly good, some of them are indifferent, some of them are terrible, and none of them are of the type that can be approved by the medical profession.

We have noticed, you have noticed, an increase in the economic pressure that has been placed upon the physician by the greatly increasing demand for free medical service during the last two years. That isn't anything new. For many years, you will recall, again outside of the medical meeting rooms, there have been many discussions of free medical services, of clinics, of abuse of hospital privileges and dispensary care, and this has been increasing during the years of depression, partly because of the increased number of people who could not pay for medical service, and partly because of the advantage taken of these services by people, perhaps unwittingly, perhaps accidentally, sometimes, but all too many have been directed to these services because sometimes the fee for the service given seemed too small. In many places, however, physicians have chosen to retain these people in their own private practice rather than to turn them into the channels of the free dispensary, in order that they might at some future time, when these people became self-supporting, still have them within their own private practice, because we ourselves have something of the blame which rests with the bad education of the public in directing them into the incorrect channels of medical service.

These years have given the opportunity for the development of hastily conceived and artificially controlled plans for offering medical and hospital services. I have just told you that we have more than 700 of such plans which have been developed at various times, some of which have never been put into operation, many of which are now operating. These plans were conceived largely, that is, the recent ones, on the basis of the profit motive. These laymen who have made the plans, who have promoted them, have seen in medical service a necessity, a service that could be sold easily, and they have offered the service on plans that meant

that they would receive from 23 to 75 per cent of the patient's money, leaving from 77 to 25 per cent of the patient's money with which to buy medical services. These plans are conceived by those who would make a profit out of the ability, the training, the brains of the medical profession. They use such methods as are cited in the Principles of Ethics as unethical, such as the solicitation of patients, such as the division of fees. None of these plans will succeed if they are operated on a perfectly ethical basis; none of these schemes will succeed if they wait for the patient to seek them out, and therefore they must send their cappers, their solicitors, their adjusters, or whatever they call them, to get business.

During these years there has been confusion in the plans for medical service for the poor and schemes for medical relief. The insurance systems of foreign countries have incorporated those two ideas: medical service and cash benefits. They never have worked successfully, they will not work successfully, the two ideas are entirely opposite; medical service is for the cure of disease and the maintenance of health; cash relief is for the relief of poverty, and the two have entirely different operations and functions.

The medical profession is the only body that is capable of judging and administering the medical care. Philanthropists, politicians, industrialists, and that class are those to whom we should look for the adjustment of the material relief, and perhaps you already know that labor has for years maintained that if it was given a living wage it would prefer to choose its own medical care and pay for it.

There has been an increase in the lay domination of medical services by relief organizations, and this is only natural, perhaps, because the lay organizations have seen something to do. There are people with perhaps not enough of other things to do who do interest themselves in the relief of poverty, who do interest themselves in some of these things which at some point or other include medical services, but there has been some conflict, and perhaps unnecessarily so, between the administration of medical relief by these organizations and the participation of medical organizations and individuals in the manner of giving that relief, so that there has resulted an unnecessary amount of friction in some places over the type and amount of medical care.

During these years there has been a stimulation of renewed attempts on the part of some individuals, groups and foundations to mechanize and socialize medicine, and in this respect I urge you to give this particular phase of the unrest of the profession some very careful consideration.

At a recent meeting which I was privileged to attend in New York City, a plan was presented, conceived by, prepared by and offered by one of the large foundations for the complete socialization of medicine in that state. The attempts to socialize the medical profession in advance of the socialization of all other sections or branches of society is



not any longer a theory, it is here. There seems to be a considerable amount of resistance to this particular proposal. Nevertheless, the plan has been made and has been offered. And do you suppose for one moment that this foundation is going to rest and abandon its effort if it is rebuffed in this one instance? It will not. Not only has the plan been offered to socialize medicine, but I could give you the instance (and this is not in your state) of a foundation that is actually subsidizing the salaries in a large health department. The body with which I happened to sit in, or at which I listened in, at that time placed itself unalterably on record as opposing subsidization of public offices, public officials, and particularly public officials in health departments, by any foundation.

There have been also some reasons for medical institutions during recent years to seek relief for their financial troubles under the guise of relieving the indigent sick. I refer specifically in this instance to the group hospitalization plans that have been offered in various parts of the country. Here again we have two entirely different problems that have been confused.

The relief of the medical institutions or hospitals from the excessive burden that they carry now because perhaps of overbuilding, perhaps of a reduced percentage of bed occupancy, or for other reasons, and the relief of the indigent for their hospitalization expenses are two quite separate and distinct problems. It seems quite reasonable that hospitals ought to be relieved in some way of the excessive burden that they are now carrying, but is it reasonable to suppose that this low income group of the population is the correct one to carry that burden and to help lift these hospitals out of their financial crisis? It seems quite unreasonable that it should be done that way. Perhaps there is considerable merit in the attempt or the proposal to offer hospitalization to the people with small means, but let us not confuse the two problems; let us consider them separately and distinctly.

These years, it seems to me, have shown the necessity for strength and united efforts of medical societies, county, state and national. These are problems, ladies and gentlemen, that cannot be solved alone by individual action. To be sure, the individual action will count much in the ultimate result because if this body today should decide to do something and the individual members should not make their actions following this meeting coincide with that decision, then the result would be naught, but conversely, the strength of medicine lies in its union. These are times when it is necessary to lay aside much—yes, I would say, if possible, all—of our individual differences when it comes to things of medical economic importance. I quite agree, and I would urge, that the individualism which has characterized medicine for centuries would be retained. It is the individual contact of physician with patient that counts for the practice of medicine today. It is that individual contact between patient and physician that we must preserve. Medicine is an individualistic pro-

fession as far as the treatment of patients is concerned, but when it concerns those economic phases of medicine which now are looking so large, I am of the opinion that it is time to lay aside a great deal of our individualism and to unite for the benefit of the public.

I have here one of the important documents of our profession. There are two, and I have the other. One is the constitution and by-laws of the American Medical Association; the other is the Principles of Ethics. In Chapter I, Section 1, I quote: "A profession has for its prime object the service it can render to humanity. Reward or financial gain should be a subordinate consideration. The practice of medicine is a profession. In choosing this profession, an individual assumes an obligation to conduct himself in accord with its ideals."

The prime function of the medical profession is the service it can render to humanity. That involves not only the scientific side of medicine; it involves all of these different methods by which this scientific service is carried to the people, and the two cannot be separated; they are so closely involved that they must be considered, if not together, closely one after the other.

To be sure, during these times we have discovered something of the weaknesses that hitherto have not been entirely unrecognized, and certain phases of medical practice which ought to be changed. I have in mind particularly some of those things which pertain to the care of the indigent. We are making now a study of the care of the indigent sick throughout the United States. We think we have successfully traced the origin of the care of the indigent in these United States to the Elizabethan poor law, which is some time ago. The Elizabethan poor law was copied almost verbatim by New York. Since that time various other states that have poor laws have copied the New York law with some modification, but the method of caring for the indigent, of giving them medical attention, has not been brought up to date. Therein lies one of the phases of medicine which needs particular study and attention on the part of the medical profession; therein is an example of political interference in the practice of medicine, of the political spoils system of the appointment of poor physicians or of the commercial idea of physicians bidding against each other for the position of poor physician. Can you imagine that in this twentieth century, when everything is measured by efficiency, by progress, that we are content to allow the sick to be cared for by methods that are antiquated?

During these years there has been an increased emphasis, I believe, placed on the worth of the Principles of Ethics. In some sections of these United States I have encountered the entreaty that the Principles of Ethics be rewritten. Well, perhaps in some instances they may not be as clear as they might be, but I suspect that the real motive behind the desire to have these Principles of Ethics rewritten is the desire to have a set of principles

of ethics that will clothe with respectability anything that a physician desires to do, and I say to you that that cannot be done. The Principles of Ethics upon which we operate are essentially those which have come down through three thousand years of testing; they were written primarily for the individual physician, because at that time there were no groups, there were no hospitals as we know them now, there were no medical societies as we know them now. But I believe firmly that the Principles of Ethics which were written for an individual for the conduct of the practicing physician are the principles which should govern the group, the principles which should govern the society, and that one principle, if correct, must be observed by all. If they are not correct, the same will hold true of them as with our laws; we must repeal them and establish a principle that is correct.

All of which (which represents professional unrest to some extent, and I have not attempted to cover all of the causes of professional unrest) calls for a vigorous stand on the part of medicine to resist any move to destroy medicine as a profession. Medicine, which represents the highest accomplishment in professional performance, must not be allowed to deteriorate into a mere trade. And who is it that is more capable of determining that medicine shall not be lost as a profession than the profession itself? There is no one more competent, there is no one else licensed to practice medicine, and I might say a great deal on the subject of the corporate practice of medicine, but if we believe in all that has preceded us, if we believe in the traditions, in all of the benefits of medicine, I believe that we must strengthen the medical organization to resist destruction of medicine as a profession.

The American medical profession is not placing itself in any position to resist those measures which seem justified to relieve the poor. However, we believe that before any change is made in any phase of the practice of medicine, that change must bring to medicine something superior to that which it supplants. We are never justified in making change for the sake of change alone, just for the sake of doing something, but the new which is brought in must be superior to that which it supplants.

So I should like to outline to you what, in my opinion, seems to be the correct procedure. We perhaps have heard criticisms from time to time of those who criticize and who destroy and who never offer anything constructive. This is a time when medicine itself must take a certain careful, accurate inventory; this is a time when medical societies must plan to make careful studies of every phase of the practice of medicine that in your particular community seems to be troublesome or dangerous or undesirable, and to that extent I would urge you to bring to those studies a mind free from bias, a mind free from preconceptions, a mind that is willing to wait to draw conclusions until all the facts are in.

Then the results that we may expect are, first of all, to protect the public good, whatever we do. And there are things which can be done and must be done, there are things which can be done in cooperation with legislatures, there are things that can be done in cooperation with the public, with lay people; certainly there are things in the protection of the public health and in furtherance of that principle to render service to humanity that can be done in cooperation with health departments, and health departments can well cooperate with the profession.

Then, as I have just mentioned, another objective is to preserve medicine as a profession.

It seems to me that a third ought to be to enable each physician to compete on his own professional merits. A great deal has been done recently in establishing certain standards for the measure of competency in the specialists, but that isn't enough. I have referred very briefly to contract practice, and I would that I had time to discuss contract practice with you. Suffice it to say that you and everyone else must consider contract practice in two entirely separate phases: the contract practice which is legitimate, necessary and ethical, and the contract practice which is dangerous, destructive, unethical, unnecessary. There are two types, and one must judge from the study of each individual case. But it is in that field in which competition between physician and physician takes on the commercial phase. Physicians are not allowed under those conditions, under the conditions of the second type, of unethical, of dangerous, unnecessary contract practice, to compete on their own professional merits. The consideration in those cases is commercial.

I wish that I might find that in every medical, that in every state and county, there is a group of men consisting of the entire membership seriously considering all of the phases of medical economics which bear upon the practice of medicine in those communities. I wish I could know that in all these phases of medical practice, whether it deals with the prevention of cancer, whether it deals with the periodic health examination, a perfectly legitimate and almost untouched field for the general practitioner, whether it deals with diphtheria prevention, which is so necessary, which is tangible, which is no longer on an experimental basis—I say I wish I could feel that in all of these contract practice arrangements there might be at once an approach to this situation which is closely akin to the habits which you have already developed in the treatment of your patients. You, I take it, do not make snap diagnoses, you do not offer a sham kind of treatment, you study the patient carefully and then you recommend the kind of treatment that you believe is appropriate, and it seems to me that is a perfectly sane method of approaching this question of medical economics. Let your habits as regards the management of disease be carried over to that extent in your interest in and study of and in your recommendations for the changes and improvements in medical economic affairs.



## CHRONIC LEG ULCERS\*

WILLIAM T. SATTERFIELD, M.D., Memphis

THE RESULTS obtained in the treatment of chronic leg ulcers in private practice and at the Out-Patient Department of the Memphis General Hospital have been so satisfactory that we feel that a report of the method used in a series of cases is warranted.

Chronic leg ulcers have long been "bug-a-bears" of medicine. Every practitioner has come in contact with patients who have been treated for these lesions for several years without result. In our series, many patients have had treatment over the period of a decade, and a few have been unsuccessfully treated for over two decades. The fault lies in the fact that the treatment has been "palliative" and not "curative."

### CLASSIFICATION

The simplest and best classification of chronic leg ulcers is:

1. Varicose.
2. Syphilitic.
3. Tuberculous.
4. Rodent.
5. Trophic.
6. Fungus.

The varicose and the syphilitic are the most commonly found groups, and it is in these that we are especially interested. It is unnecessary to go into details as to the diagnosis of the different types. It is sufficient to state that the varicose type has sloping edges, is usually one ulcer, not multiple, has a profuse purulent base and discharge, with a reddened area or inflammation surrounding it. There is either the presence or the history of varicose veins. The syphilitic type is punched out, often multiple, with a hemorrhagic base, which bleeds easily, very little purulent discharge, and without much inflammatory area surrounding. There are present concomitant

signs or the history of syphilis, usually with a positive Wassermann test. The tuberculous ulcer is rare on the leg, has sloping edges, a necrotic, greyish base, very little discharge and very little inflammatory area. A focus of tuberculous infection is often found in the lung, or other common site, with the general symptoms of tuberculosis. The rodent ulcer has the well-rounded, sharply-defined appearance of a malignant growth, raised, very little discharge or inflammation, the cancer age, and the absence of signs which distinguish the other types of ulcers. The trophic ulcer is very shallow, with sloping edges, very little discharge, and an area of blanched appearance surrounding.

The fungus ulcer is also rare on the lower extremity. The actinomycotic type is more common than the blastomycotic type. The lesion begins as a small nodule, which breaks down, discharging the characteristic sulphur-like granules. The occupation of the patient is taken into consideration.

### PATHOLOGY

Curative treatment of chronic leg ulcers can be based only on a thorough knowledge of the pathology. This can best be demonstrated by the diagram indicating the steps in ulcer formation, as submitted by McPheeters in his textbook. Considering the varicose type, we first have the varicose veins developing from some change in the vein wall. This change in time affects the valves of the veins. The most common cause of such a change is from phlebitis, although trauma and the constant upright position have some bearing. Mild attacks of phlebitis often go unnoticed, with subsequent varicose formation. Sections of varicose veins show bacterial infection in over 90 per cent of cases. With changes in the vein wall, the vein is weakened. With valve affection, there is a backflow into the superficial veins, which, in their weakened condition, soon dilates them. After stag-

\*Read before the Memphis and Shelby County Medical Society, March 7, 1933. From the Department of Surgery, College of Medicine, University of Tennessee, Memphis, Tenn.

nation has been present a considerable time, tissue necrosis results, and the break in the continuity of the leg surface or ulcer formation takes place.

### GENERAL TREATMENT

There is little to say about the general treatment of chronic leg ulcers. Anti-syphilitic therapy for the syphilitic, general treatment for tuberculosis in the tuberculous type, and general treatment for the cardionephritic type of varicose ulcers are the main considerations. This general treatment is carried on in conjunction with the local treatment. One word about the syphilitic type; we have noticed that ulcers respond fully twice as quickly to the arsphenamines. There is little help for the local treatment when the patient is receiving mercury or bismuth.

### LOCAL

With three exceptions, the same routine of local treatment is applicable to all leg ulcers. These exceptions are: (1) radium, X-ray, or surgical excision for the malignancies; (2) X-ray for the fungus infections; (3) physio-therapy for the trophic types. All other ulcers are treated exactly alike locally. Contrary to previous expressions from various authors, the syphilitic respond to the local treatment as well as the varicose or other types. We have cured some ulcers on syphilitic patients who were not receiving antiluetic treatment.

The method of treatment which we advocate is as follows:

1. Obliteration of all varicose veins. We use sodium morrhuate (cod-liver oil) in 5 per cent solution, mixed with benzyl alcohol for its anaesthetic effect. This product is obtainable in 5 and 2 c.c. ampoules. We use a small hypodermic needle, 22 or 24. After testing the deep circulation, the veins are marked off with some stain as mercurochrome while the patient is standing. The patient is then asked to lie down, the needle is inserted in the segment of the vein chosen, the vein is milked of blood by the thumb and forefinger, and from one-half to one c.c. of the solution injected. Firm pressure is applied to the vein at the point of

injection for 2 to 3 minutes. Four or five segments or veins may be injected at a sitting. No tourniquet is used. We have never seen any harmful effect such as slough or embolus formation from injection with sodium morrhuate. We consider this solution far superior to quinine and urethane combinations, sugar solutions and sodium chloride solutions. Obliteration of the veins is accomplished concurrently with the ulcer treatment.

2. Local treatment of the ulcer. If the ulcer is not more than four or five inches in diameter, the procedure is as follows: The ulcer and leg are cleansed with benzene and ether. The base of the ulcer is cauterized with a fifty per cent solution of silver nitrate. A layer of some soft ointment such as 5 or 10 per cent ammoniated mercury is applied to the ulcer itself in a thickness of from one-quarter to one-half inch. A section of an ordinary rubber bath sponge (procurable at any drug store) is cut exactly the size of the ulcer. One layer of gauze dressing is applied to each surface of the sponge and it is placed directly over the ulcer. A bandage, preferably an elastic one of the "Ace" type, is then applied from the foot to the knee, applied smoothly, and with no reverse turns. The bandage is applied from the foot upward, and should compress the rubber sponge to one-half its thickness. The patient is instructed to walk continuously for the succeeding half hour.

The contraction of the calf muscles while walking with the subsequent contraction of the rubber sponge makes the sponge a "venous heart" which forces stagnant serum from the area. The relaxation of the calf muscles and sponge allows fresh arterial blood to rush into the area. This process soon makes the tissues healthy and healing ensues. The ulcers will heal at the rate of one-half to three-quarters of an inch each week. The sponge is changed at intervals of four to six days. The secondary bacterial infection which is usually present may be disregarded, as the ulcer area is clean after the first or second dressing. The best explanation is that the wound is being dressed in its own discharge, and the bac-



teria are killed by some chemical or antiseptic action, the "pansement specifique" of Besredka.

If the ulcer is over five inches in diameter, and extends almost around the leg, the sponge is difficult to apply. On these types, we have used, as a preliminary measure prior to sponge application, two methods; namely, strapping with two inch adhesive from the foot to the knee, or the application of an elastic adhesive bandage suggested by Mr. Dickson Wright of St. Mary's Hospital, London. This latter bandage is simply an elastic bandage lined with Zinc oxide adhesive. These methods are much slower, even when applied to smaller ulcers, but they are fairly sure.

Other methods which we have used and discarded in favor of the sponge method are: simple strapping with adhesive strips, excision of the ulcer with skin grafting, Unna's boot casts, normal saline injection of the ulcer base, and rest in bed with elevation of the extremity, with or without wet dressings. The most important points against these methods are the disabling of the patient for a length of time (unnecessarily) and the failure to cure.

### RECURRENCES

An important point is the prevention of recurrences. Our routine is to have the patient wear a simple elastic bandage for support for two to three months. This bandage may be of the "Ace" type or may be simple two or three inch stock elastic, worn while the patient is on his feet and removed at night. It is applied from the foot to the knee.

### RESULTS

Our series of cases totaled 44. Of these, two received treatment for two and three weeks and failed to return. Of the remaining 42, we had 38 cures. This is a percentage of 90.4. Of the four failures, two were in elderly patients, both with tertiary syphilis, whom the dermatologist judged too feeble for active antiluetic treatment,

and who received only "mixed" treatment. Both were bilateral, one was of fifteen years duration and the other of eighteen years. These improved, but have not been completely healed. One failure was a cardionephritic with marked decompensation. The other failure was a young grocery delivery boy who was luetic, and who had three recurrences, each one brought on by "barking" his shin against his bicycle pedal. We are still treating him.

Sixty per cent of the ulcers were varicose, thirty per cent were syphilitic, only five per cent tuberculous, and the others consisted of the rarer types. The duration of the ulcers varied from one month to 22 years. The average duration was 3 years. Only two cases of the series had had any attempt at constructive treatment prior to our attempts. The majority had only had dressings. The largest ulcers healed were 8x10 inches. The sizes varied from this to 2x1 inches. Only four cases had bilateral involvement. Two cases gave a history of a phlebitis following or during typhoid fever. Several cases gave a history of post-partum phlebitis. Two cases were pregnant at the time of treatment. Three cases were past 70 years of age. The average duration of treatment to a cure was 9 weeks. The longest period of treatment for a cure in the healed cases was 16 weeks and the shortest, 2 weeks. Myocardial decompensation was present in seven cases.

### SUMMARY

1. The underlying cause of failure in the treatment of chronic leg ulcers is the fact that the treatment is palliative and not curative.
2. With the exception of malignant, fungus, and some trophic ulcers, the local treatment of chronic leg ulcers is identical.
3. In syphilitic ulcers, healing is more prompt when the patient is receiving arsphenamines than when receiving other antiluetic preparations.
4. The "venous heart" or rubber sponge method of local treatment of leg ulcers as

herein outlined is the most satisfactory method.

5. 38 of 42 chronic leg ulcers were healed by the venous heart method, a percentage of 90.4.

6. The most satisfactory solution for the injection of varicose veins is sodium morphuate.

### CONCLUSION

We firmly believe that one of the time-honored "chronics" of medical practice may be eliminated by the application of constructive treatment of chronic leg ulcers, and we feel that patients suffering with these ills should have the benefit of such treatment.



## ADDRESS OF WELCOME\*

JAMES D. RICHARDSON, of the Murfreesboro Bar

*Mr. President and Gentlemen of the Association:*

A FORMAL address of welcome to your Association from the citizens of Murfreesboro is just about as useless and unnecessary as blue-ribboned buggy whips in the City of Detroit, and yet, for time immemorial, it seems to have been the custom of our people to give expression to their sense of gratitude for your honoring us with your presence. As illustrative of this fact, may I ask your indulgence while I attempt to read five faded sheets which came into my possession some twenty years ago.

"The words of welcome I shall utter are not necessary for those of you who have heretofore honored us with your presence. You know that visitors are always cordially received here. But to those who on any former occasion have not been with us, I am before you on behalf of our resident physicians and all our people to give assurance that the warmest greetings and welcome are extended. Our welcome, too, I assure you, shall appear in other ways than by mere words. I do not really understand, however, why doctors need a formal word of welcome anyway, here or elsewhere. The truth is they are welcomers of the human race. None of us, or but few of us, at any rate, get here without a first and usually a cordial welcome from a member of your profession, then occupying the confidential relation of family physician.

"I congratulate you gentlemen that you are here. I congratulate our people that you are with us. And there may be some, though I am not of the number, who will congratulate your home people and patients that you are here.

"I believe in doctors, and do not agree with the poet who said:

For men are brought to more distresses,  
By taking physic than by diseases;  
And therefore commonly recover,  
As soon as the doctors give them over.

"Nor do I endorse the old proverb which runs this way:

The patient can oftener do without the doctor  
than the doctor do without the patient.

"I not only like doctors, myself, but believe in them. I was not exactly born in a doctor's office, but I was brought up in one. My father and elder brother were both doctors, and my love and admiration of them inspired within me the supremest respect and veneration for the profession.

"My earliest recollections, and the tenderest, in life are of the country physician with his saddlebags, riding horseback from early morn till evening, and often late at night on his errands of love and mercy. It was never too hot nor too cool, too wet nor too dry, for him to ride when the call came for him. There was no pleasure he did not forego, and no self-denial he did not make, at the call of duty. I thought all doctors were like him.

"For these reasons, I repeat, I honor your profession and believe in doctors. I do not like them for the reason assigned by one in my hearing. He said he liked doctors because they took life so easy.

"It is not my province, gentlemen, to proffer advice to you. But I will venture to say, if you keep your profession abreast with the other great professions of our land, the law, the press, the pulpit, the college, indeed all others, it is indispensable that meetings such as this should be held. In no other way can you equal the advancements which are apparent in all the professions and callings, and which so preeminently characterize the closing years of the nineteenth century.

"Gentlemen, I close by expressing the sincere hope that the greatest good will result from your deliberations, and now again

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\*Read at Murfreesboro, November 23, 1933, before the Middle Tennessee Medical Association.

bid you all an old-fashioned, hearty, and most cordial welcome to our homes and to our hospitalities."

My friends, that welcome address was delivered by my father nearly forty years ago to this association at its first meeting held in this city, and I felt it not inappropriate that his son should read the message to the sons of the fathers to whom he delivered it.

The sentiment contained in that address is symbolic of the feelings of our people today, because we are delighted that you are again with us, and let me say, in closing, that if every word of welcome falling from the lips of our people today were a flower, you would be literally buried this afternoon beneath a bower of beautiful roses.





DR. J. O. MANIER  
*President, Tennessee State Medical Association*

## OUR NEW PRESIDENT

Dr. John Owsley Manier was born in Nashville, Tennessee, March 18, 1887, the son of the late W. R. Manier, Sr., and Mrs. Mary Owsley Manier.

As a boy he attended the public schools of Nashville, Wallace University School, and played ball on the sand lots. He attended Vanderbilt University, from which institution he was graduated with the degree of A.B. in the year 1907.

His father was influenced by the late Dr. Dixie Douglas to send Owsley to the University of Pennsylvania for the completion of his medical education. He was graduated with honors by the University of Pennsylvania in 1911.

While in college, both at Vanderbilt and the University of Pennsylvania, he distinguished himself on the gridiron. He was awarded his "V" by Vanderbilt University in 1904-05-06. He was awarded his "P" by the University of Pennsylvania in 1908. Only last year he was placed on the "All-Time Vanderbilt Eleven" by the vote of the alumni of the institution.

He served an internship in the University of Pennsylvania Hospital. On his return to Nashville to engage in practice he became associated in the office with Dr. W. H. Witt. He also became assistant to the Chair of Medicine in Vanderbilt University, and superintendent of the Vanderbilt Hospital. At the present time he is associate professor of medicine of Vanderbilt University Medical School.

He was married to Miss Helen Dayton, of Morristown, New Jersey, in 1915. They have two sons, Ogden Dayton and Will R. Manier III.

When war was declared in 1917, he became a member of the Red Cross Hospital Unit "S," known as the Vanderbilt unit, which served throughout the war.

His work as a practitioner of medicine has been characterized by energy and thoroughness and freedom from fads. When he began practice he at once affiliated himself with organized medicine. He has served as the secretary of the Nashville Academy of Medicine and the Davidson County Medical Society. He has also served as president of his home organization. He was made chairman of the board of trustees of the State Association in 1922, which position he held until 1934, when he resigned. He filled all these positions with credit.

He has been a member of the board of governors of the American College of Physicians for five years.

He has been on the firing line on the side of medicine wherever its interests have been challenged ready to receive and ready to give blows.

This year, in the language of the football field, we have made him field general. We have passed him the ball. The signal calls for the next play "through center." Let every lineman and every back get his man, and Owsley will make a touchdown.

H. H. S.



# THE JOURNAL

OF THE

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H. H. SHOULDERS, M.D., Editor and Secretary

MAY, 1934

## EDITORIAL

### THE CHATTANOOGA MEETING

In many respects the meeting of the State Association held in Chattanooga last month was the most successful the Association ever held. In the first place, the Chattanooga and Hamilton County Medical Society, as our hosts, did everything within their power to make the meeting a success. The Chamber of Commerce at Chattanooga made substantial contribution.

The House of Delegates was organized for business promptly by the formation of various committees. Questions which often arise concerning the seating of delegates were few in number, and were disposed of with promptness. The delegates were at their places promptly. The reports of officers and committees were concise and to the point and, in most instances, showed effort and thought. The reference committees did their work promptly and well. The House acted judiciously. Such discussion as was engaged in on the floor was brief and to the point and the actions taken were definite.

Of particular importance is the fact that the House of Delegates as a whole acted on the legislation proposed by the legislative committee for the reorganization of the health department. So today this bill is not a bill sponsored by a committee. The bill has been sponsored by a committee, endorsed by the board of trustees and endorsed by unanimous action of the House of Delegates after a thorough understanding of its provisions. There never can arise again the question as to a division of opinion among members of the medical profession, as has happened before on this matter.

Another important action was the creation of a committee to contact candidates for governor and the legislature with a view to securing their pledge to support the passage of the bill.

This committee is composed of the following:

Dr. John M. Lee, Nashville, chairman.  
Dr. Robert Sullivan, Nashville.  
Dr. H. S. Shoulders, Nashville.  
Dr. Battle Malone, Memphis.  
Dr. J. G. Price, Dyersburg.  
Dr. Walter Oursler, Humboldt.  
Dr. M. S. Roberts, Knoxville.  
Dr. E. G. Wood, Knoxville.  
Dr. W. J. Sheridan, Chattanooga.

On another page of this issue of the JOURNAL will be found evidences of their activity.

The scientific assembly was equally successful. Every person who was given a place on the program was present at the meeting, and all except two papers were read. All of these scientific papers possessed exceptional merit.

The registration at the meeting was 451, which was quite above the average. At the last meeting in Chattanooga in 1927, 325 were registered. Not only was the registration high, but the attendance on scientific meetings and business meetings was exceptionally large.

Above all, there was evidence on every hand of a spirit of unity and a spirit of determination which was never before quite so evident. The organized profession has always been a potent force for the good of humanity. It has never sought to be a potent force in political matters. The day has arrived, however, when it has become vitally necessary that the organized profession of medicine assume a leadership in medical matters and direct forces along the lines they should go. This does not mean that the organization should become or will become engaged in partisan politics—not at all. It does mean, however, that we must take a most active interest in measures and issues, and that it must be a united action.

## OUR LEGISLATIVE PROGRAM

On another page of this issue of the JOURNAL will be found the bill to reorganize the public health department of the state. In addition thereto will be found communications from two candidates for governor in response to questions put to them by the chairman of the committee.

The fact that these two gubernatorial candidates have pledged their support to this legislation does not mean that the members of the medical profession may stop their activities aimed at securing pledges of support from candidates for the House and Senate. On the contrary, it means that the medical profession must be on the alert in every county and senatorial district.

We are creating in the JOURNAL a new general heading—"Our Legislative Program." Under it will be found in each issue statements pertaining to the developments that are taking place.

## THE COMMITTEE ON MEDICAL EDUCATION

For many years there has been a standing committee on medical education of the State Association. This committee was almost functionless.

Undergraduate medical education is very largely planned and accomplished by influences which are separate and apart from the practitioners of medicine.

The committee on medical education of the State Association last year was composed of Dr. O. S. Warr, chairman, Memphis; Dr. Herbert Acuff, Knoxville; and Dr. W. H. Witt, Nashville.

This committee gave serious thought to the question of postgraduate education and made some definite recommendations to the House of Delegates which were approved.

There is no doubt but postgraduate education at the moment is just as important as, if not more important than, undergraduate medical education. Suggestions have been made and movements inaugurated to curtail the number of graduates for fear of an enormous surplus of doctors. It is therefore important that the matter of post-

graduate education of doctors already engaged in practice should receive the maximum of attention.

On another page of this issue is a statement by Dr. W. H. Witt, a member of the committee, on this subject.

This committee seems to recognize that the postgraduate education accomplished by medical journals, medical society meetings and attendance on clinics, etc., as being of far more importance on the whole than any of the brief institutional postgraduate courses offered in America, however valuable as such they may be. They also recognize and emphasize that postgraduate education should properly be a cooperative effort within organized medicine itself.

The committee should be commended and should receive the support of the whole profession.

## RADIOLOGISTS OF STATE ORGANIZE

During the recent meeting of the Tennessee State Medical Association in Chattanooga the radiologists of the state met and organized the Tennessee Radiological Society, with the following officers:

Dr. C. M. Hamilton, of Nashville, president.

Dr. C. H. Heacock, of Memphis, vice president.

Dr. Franklin B. Bogart, of Chattanooga, secretary-treasurer.

It is the object of this organization to promote radiology and to endeavor to present to the profession of the state advances in our knowledge of radiology from time to time. It is desired to secure as members all the members of the Tennessee State Medical Association who are doing diagnostic roentgenology, therapeutic roentgenology or radium therapy.

## DEATHS

Dr. J. H. Litterer, Nashville. Vanderbilt University Medical School, 1917. Aged 42. Died April 4, 1934.



## THE BILL TO REORGANIZE THE STATE HEALTH DEPARTMENT

AN ACT to reorganize the Department of Public Health; creating a Board of Health; prescribing the method of election and powers of the Commissioner of Public Health; and repealing Section 328 of the Code of Tennessee.

Section 1. Be it enacted by the General Assembly of the State of Tennessee, That Section 328 of the Code of Tennessee be, and the same is, hereby repealed.

Sec. 2. Be it further enacted, That the Governor shall appoint a board to be known as the Board of Health to serve without compensation. This board shall consist of nine members, of whom six shall be licensed practitioners of medicine, one a licensed practitioner of dentistry, one a licensed pharmacist, and one a member of the Tennessee Congress of Parents and Teachers and the Tennessee Federation of Women's Clubs. Two of the medical members of said Board of Health shall be elected from each grand division of the State.

The medical members of said board shall be appointed by the Governor from a list of six from each grand division of the State, certified to the Governor by the House of Delegates of the Tennessee State Medical Association. One dentist member of said board shall be appointed by the Governor from a list of three certified to him by the Tennessee State Dental Association. The pharmacist member shall be appointed by the Governor from a list of three certified to him by the Tennessee Pharmaceutical Association. The member of the Tennessee Congress of Parents and Teachers and the Tennessee Federation of Women's Clubs shall be appointed by the Governor from a list of three nominations certified to him by joint action of the Executive Committees of these two aforesaid organizations.

In making appointments to membership on said Board of Health as aforesaid the Governor shall designate the term of each of the respective members of said board at from one to three years, so as to provide for the expiration of the term of three of the members of said board each year from and after the effective date of this Act, and the appointment, each year, of three successor members of said board whose terms of

office shall be three years from the date of appointment. Each successor member of said board, or member named to fill a vacancy, shall be appointed from a list of not less than three persons certified by the State Medical Association, the State Dental Association, the Tennessee Pharmaceutical Association, or the Tennessee Congress of Parents and Teachers and the Tennessee Federation of Women's Clubs, respectively, in the manner above set out.

Sec. 3. Be it further enacted, That the Board of Health shall formulate the policies of the Department of Public Health and supervise its activities.

Sec. 4. Be it further enacted, That the Governor shall appoint a Commissioner of Health, who shall execute and administer the activities of the Department of Public Health under the supervision of the Board of Health. The term of office of said Commissioner of Health shall expire with the beginning of the term of the Governor next elected.

Sec. 5. Be it further enacted, That the Board of Health shall meet as soon as practicable after appointment, and semiannually thereafter, on dates to be fixed by the board. The Board shall annually elect a President and Vice President from its own membership, and the Commissioner of Public Health shall serve as Secretary of said board. Special meetings shall be held from time to time on the call of the President, or of a majority of the members. Six members shall be necessary to constitute a quorum at any regular or special meeting, and the action of a majority of all existing members of the board shall be the action of the board. The necessary expense of members incurred in the attendance at any regular or special meeting of the board shall be paid by the Treasurer of the State, on the warrant of the Comptroller, when certified by the Commissioner of Public Health.

Sec. 6. Be it further enacted, That all laws and parts of laws in conflict with this Act be, and the same are, hereby repealed.

Sec. 7. Be it further enacted, That this Act take effect from and after its passage, the public welfare requiring it.

## ENDORSEMENTS OF THE GUBERNATORIAL CANDIDATES

April 19, 1934.

Hon. Hill McAlister, Governor,  
State Capitol,  
Nashville, Tenn.

Dear Governor McAlister:

The Tennessee State Medical Association, in annual meeting at Chattanooga, in April, 1934, voted to seek at the next session of the state legislature the introduction of and enactment into law a bill providing for the reorganization of the Tennessee State Department of Health. A copy of the proposed bill is submitted herewith for your consideration.

The State Medical Association respectfully requests the following information with respect to your attitude toward this proposed legislation:

1. Do you approve this bill?
2. If reelected Governor of Tennessee, will you make this an administration measure and give it the support of your administration in the legislature?
3. If reelected Governor of Tennessee, will you sign this bill when it is voted on favorably and passed by the legislature?

Respectfully submitted,

JOHN M. LEE, *Chairman*.

April 26, 1934.

Dr. John M. Lee, Chairman,  
Doctors' Building,  
Nashville, Tennessee.

Dear Doctor Lee:

Your letter of April 19th was handed to me by Dr. Cocke yesterday, and I hasten to reply.

The bill, which has been endorsed by the State Medical Association, a copy of which accompanied your letter, is in substance the bill that I approved at the 1933 session of the General Assembly, which passed the House of Representatives and failed in the Senate by one vote. My answer therefore to all of your questions is "yes."

Moreover, I see no reason why the provisions of this measure should not be placed in effect immediately. If you will furnish me with the list of physicians from which the six licensed practitioners of medicine are to be chosen by the Governor, I will appoint them immediately, and also the

other three members as provided in the proposed bill. This council shall have and exercise immediately the powers and duties that are proposed to be conferred upon them by this Act, and the present council, of course, is to be superseded.

I will be obliged if you will advise me at your earliest convenience if this course has the approval of your committee.

Very truly yours,

(Signed) HILL MCALISTER,

HM.B

Governor.

April 30, 1934.

Dr. John M. Lee, Chairman,  
Doctors' Building,  
Nashville, Tennessee.

My dear Doctor Lee:

Responding to your letter of April 19, which absence from the city has prevented me from answering until today, I answer each of the three questions therein propounded unequivocally "yes"; and, in so doing, I mean what I say.

Two years ago, when I was a candidate for Governor, I advocated such a bill; and, had I been elected then, it would be a law now.

In my announcement, in the present campaign, I declared for such a bill in the following language:

"I shall advocate an Act creating a State Board or Council of Public Health, a majority of whom shall be selected from nominations made by the State Medical Association, one of whom shall be selected from nominations made by the State Dental Association, and the others of whom shall be selected from nominations made by other organizations interested in this type of work. The State Board or Council of Health, as advocated by me, shall have power to formulate the policies and supervise the activities of the Public Health Department."

I therefore pledge myself to the support of your bill, and, if elected, will do my utmost to see that it is passed early in the legislative term.

Very truly yours,

(Signed) LEWIS S. POPE.



## POSTGRADUATE WORK

W. H. WITT, M.D.,\* Nashville

THE usual concept of postgraduate instruction is a course at some postgraduate school—such a course lasting, say, three weeks, or even three months, or longer. Such a conception of postgraduate work, while concrete, is far from inclusive.

The forward-looking doctor begins his postgraduate instruction as soon as he leaves college, or leaves his hospital internship. He subscribes to one or more journals, and he reads them. He joins his county and state medical association, and attends them. He not only listens to papers read, but he prepares papers. He buys books from time to time and he reads them, and every time he reads two pages he runs across something he did not know, or had forgotten, and makes at least a mental note of it. If he does these things—reads his journals, reads his books, goes to medical meetings—he keeps up pretty well and adds to his usefulness to his community. If he does not do these things, if he neglects his reading, if he withdraws from contact with his fellow physicians and plays a lone hand, he becomes a back number in effect, at least, although he may have a good practice and do good work.

Certain disadvantages plainly attach to rural and small-town practice—no use to quibble about that. But the time approaches—in fact, has already arrived—when those disadvantages are not nearly so real as they were a few years ago, and if those same rural practitioners are alert to their opportunities they can prosper accordingly.

What are the advantages a city or larger town doctor has over his rural brother of the same original education and comparable personality? Essentially, they are opportunities of contact, partly personal contact, but largely by their repeated attendance on meetings of medical societies.

The disadvantages referred to have been very real in that it was difficult in the olden days to attend meetings. The distances were too great for old Dobbin, or the roads

were too bad for Lizzie to negotiate the ten or fifteen miles to a place of meeting.

Local jealousies and lack of cooperation have also had their weight in lessening the value of county society meetings—conditions that, while they are by no means unheard of in larger towns and cities, are nothing like so operative as in small groups. These drawbacks to an eager and profitable interest in medical societies have largely been eliminated by good roads and automobiles. It can be and should be that no doctor in Tennessee is more than an hour's drive from a progressive, active medical meeting. It is to that end that the Committee on Medical Education, with Dr. Otis Warr, Memphis, as chairman, has suggested the division of the State of Tennessee into groups of counties and urges that an effort be made to arrange for attractive programs and that the doctors in counties grouped together be urged to take not only an interest, but an active part, in the deliberations of such meetings.

These suggestions were presented in the form of a report to the House of Delegates at the recent meeting of the Tennessee State Medical Association at Chattanooga. The report was enthusiastically adopted and the committee authorized to carry out during the current year, as far as possible, the ideas involved in that report. To that end an effort will be made to divide the rural counties of the state into some twenty-five or more "zones" or "districts," each zone comprising three or more counties—the basis of zoning being chiefly geographical, including in that concept not so much that the counties lie near, but mainly that some central point can be readily reached by the present highway system. This may in certain instances work a hardship on some county, but the interest of the greater number should prevail.

There will be presented a purely tentative grouping of the counties of the state and suggested centers where the bulk of the meetings may be held. The wishes of the physicians of any zone should be decisive in defining a zone, or the selection of the favored point of meeting.

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\*Member of Committee on Medical Education.

## LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. J. O. Manier, Nashville.  
 Vice President for East Tennessee—Dr. W. B. Campbell, Cleveland.  
 Vice President for Middle Tennessee—Dr. J. K. Blackburn, Pulaski.  
 Vice President for West Tennessee—Dr. G. H. Berryhill, Jackson.  
 Secretary—Editor—Dr. H. H. Shoulders.  
 Assistant Secretary—Editor—Dr. W. M. Hardy.

## TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.  
 Dr. Ralph Monger, Medical Arts Building, Knoxville.  
 Dr. W. L. Williamson, 915 Madison Avenue, Memphis.  
 Dr. H. B. Everett, 2541 Broad Street, Memphis.  
 Dr. E. R. Zemp, Walnut Street, Knoxville.

## COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.  
 Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. J. H. Revington, Chattanooga.  
 Fourth District—Dr. J. T. Moore, Algood.  
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 Ninth District—Dr. E. H. Baird, Dyersburg.  
 Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.  
 Dr. H. H. Shoulders, Nashville; Middle Tennessee.  
 Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.  
 Dr. M. M. Cullom, Nashville; Middle Tennessee.  
 Dr. E. C. Ellett, Memphis; West Tennessee.

## OFFICERS OF COUNTY MEDICAL SOCIETIES FOR THE YEAR 1934

County	President	Vice President	Secretary-Treasurer
Anderson	J. M. Cox, Coal Creek	Thomas Jennings, Clinton	J. S. Hall, Clinton
Bedford	S. S. Moody, Shelbyville	W. T. Sharp, Farmington	Alfred Farrar, Shelbyville
Blount	E. W. Griffin, Townsend	C. C. Vinsant, Maryville	H. A. Calloway, Maryville
Bradley	E. R. Ferguson, Cleveland	Vance H. Bell, Cleveland	D. N. Arnold, Cleveland
Campbell	R. J. Buckman, Westbourne	S. S. Brown, Jellico	F. A. McClintock, Newcomb
Carroll	O. W. Fesmire, McKenzie	E. W. Hillsman, Trezevant	J. H. Williams, McKenzie
Carter	C. B. Baughman, Elizabethton		E. T. Pearson, Elizabethton
Cocke			J. E. Hampton, Newport
Chester, Henderson, and Decatur			Wm. I. Howell, Lexington
Cumberland	E. W. Mitchell, Crossville		V. L. Lewis, Crossville
Davidson	John M. Lee, Nashville	W. G. Kennon, Nashville	N. S. Shofner, Nashville
Dyer, Lake, and Crockett	W. S. Alexander, Ridgely	B. G. Marr, Dyersburg (Dyer) R. E. Hellen, Ridgely, (Lake)	J. Paul Baird, Dyersburg B. F. McNulty, Bolivar F. L. Roberts, Trenton T. F. Booth, Pulaski M. A. Blanton, Mosheim U. B. Bowden, Pelham R. A. Purvis, Morristown Wm. J. Sheridan, Chattanooga
Fayette, Hardeman			
Gibson	Featherston Douglas, Dyer	Paul D. Jones	F. L. Roberts, Trenton
Giles	John Morris, Pulaski	Joe B. Wright, Lynnville	T. F. Booth, Pulaski
Greene	C. P. Fox, Greeneville	L. E. Dyer, Greeneville	M. A. Blanton, Mosheim
Grundy	D. H. Bryan, Monteagle	T. F. Taylor, Monteagle	U. B. Bowden, Pelham
Hamblen	D. R. Roach, Morristown		R. A. Purvis, Morristown
Hamilton	Franklin B. Bogart, Chattanooga	James L. Bibb, Chattanooga	Wm. J. Sheridan, Chattanooga
Hardin, Lawrence, Lewis, Perry, and Wayne	J. W. Danley, Lawrenceburg		C. C. Stockard, Lawrenceburg
Haywood	R. T. Keeton, Brownsville	Glenn T. Scott, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Elroy Scruggs, Paris	R. G. Fish, Paris
Hickman	L. F. Pritchard, Only	E. W. Stevenson, Centerville	W. K. Edwards, Centerville
Humphreys			W. W. Slayden, Waverly
Jackson	J. D. Quarles, Whitleyville	R. C. Gaw, Gainesboro	F. B. Clark, Gainesboro
Knox	E. A. Guynes, Knoxville	H. T. McClain, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	J. L. Dunavant, Ripley	T. E. Miller, Ripley	J. R. Lewis, Ripley
Lincoln	J. E. Sloan, Boons Hill		J. M. McWilliams, Fayetteville
Loudon			J. Gilbert Eblen, Lenoir City
Macon	D. D. Howser, Lafayette		J. Y. Freeman, Lafayette
Madison	Kelly Smythe, Bemis	Swann Burrus, Jackson	S. M. Herron, Jackson
Maury	Robert Pillow, Jr., Columbia	C. O. Fowler, Springhill Watt Keiser, Columbia	C. D. Walton, Mt. Pleasant R. W. Epperson, Athens H. C. Sanders, Selmer W. J. Cameron, Sweetwater Paul E. Wilson, Clarksville Frank Kimzey, Union City A. B. Qualls, Livingston F. O. Geisler, Isabella Thurman Shipley, Cookeville W. W. Hill, Harriman J. S. Hawkins, Springfield J. A. Scott, Murfreesboro D. M. Woodward, Huntsville C. P. Wilson, Sevierville
McMinn	W. R. Arrants, Athens	D. P. Brendle, Englewood	
McNairy	John R. Smith, Selmer	G. B. Curry, Selmer	
Monroe			
Montgomery			
Obion	W. B. Harrison, Union City	Har Glover, Union City	
Overton			
Polk	H. P. Hyde, Copperhill	T. J. Hicks, Copperhill	
Putnam	J. T. Moore, Algood	T. M. Crane, Monterey	
Roane	John Roberts, Kingston	F. A. Neergaard, Harriman	
Robertson	J. R. Connell, Adams		
Rutherford	W. T. Robison, Murfreesboro	J. D. Hall, Readyville	
Scott			
Sevier	O. H. Yarberry, Sevierville	R. J. Ingle, Sevierville	
Shelby	W. L. Williamson, Memphis, J. B. Stanford, Memphis, President-Elect	W. L. Rucks, Memphis	J. J. Hobson, Memphis, Treasurer; A. F. Cooper, Memphis, Secretary Thayer S. Wilson, Gordonsville
Smith	W. B. Dalton, Gordonsville	R. E. Key, Monroville	
Sullivan and Johnson	W. K. Vance, Jr., Bristol	J. V. Hodge, Kingsport (Sullivan) J. C. Hutchinson, Crandall (Johnson) J. H. Stephens, Hendersonville	Arthur Hooks, Bristol L. M. Woodson, Gallatin L. J. Lindsey, Covington John S. Harris, McMinnville C. H. Long, Johnson City E. J. Huey, Martin A. F. Richards, Sparta K. S. Howlett, Franklin J. R. Bone, Lebanon
Sumner	H. H. Bate, Castalian Springs		
Tipton	G. B. Gillespie, Covington		
Warren	E. L. Mooneyham, Rock Island		
Washington	N. E. Hartsook, Johnson City	W. J. Mathews, Johnson City	
Weakley	T. W. Fields, Dresden	T. V. Hannings, Martin	
White	R. E. Lee Smith, Doyle	E. B. Clark, Sparta	
Williamson	H. C. Stewart, Franklin	Dan German, Jr., Franklin	
Wilson	S. B. McFarland, Lebanon	R. L. Witherington, Lebanon	



## WOMAN'S AUXILIARY

*President*-----Mrs. Willis Campbell  
Memphis

*President-Elect*-----Mrs. R. G. Reaves  
Knoxville

*Press and Publicity*-----Mrs. W. W. Wilkerson, Jr.  
Nashville

### WELCOME TO OUR NEW PRESIDENT

Those of us who were unable to attend the convention in Chattanooga, and who were therefore deprived of the privilege of greeting Mrs. Campbell personally, would like to take this means of expressing to her our earnest desire to cooperate, and our appreciation of the fact that a competent and magnanimous leader is at our helm. We hope and feel assured that this will be a great year for our Auxiliary.

The activities of the convention were carried out according to the program which had been announced. But no mere reading of the program could have prepared the guests for the elaborate entertainments and pleasing friendliness of the wives of the Chattanooga doctors. The Auxiliary feels very indebted to the committee in charge and to the other Chattanooga ladies who contributed so much time and thought to the hospitality for the visitors.

A large attendance was shown by the registration on Tuesday, April 10. At the pre-convention board meeting on that day, Mrs. W. O. Floyd, state president of the Auxiliary, presided. The officers' and chairmen's recommendations for the new year's work were enthusiastically received by the large representation at that meeting.

Following the board meeting the out-of-town guests were taken on a scenic drive about Chattanooga and to Lookout Point. The drive terminated in a delightful five o'clock tea at the home of Dr. and Mrs. Raymond Wallace, on Lookout Mountain, at which time the wives of the Chattanooga doctors were hostesses to the out-of-town guests.

On Tuesday evening, Mrs. Floyd and Mrs. Willis Campbell entertained the members of the board most pleasantly with a dinner at the Patten Hotel.

The seventh annual meeting of the Woman's Auxiliary to the Tennessee Medical Association was called to order on Wednesday morning by the president, Mrs. W. O. Floyd. Presiding in her customarily gracious and pleasing manner, Mrs. Floyd conducted the detailed program of the meeting with commendable directness. The reports of the officers and chairmen for the past year reflected the increasing interest and activity of the Auxiliary members. In its acquisition of a new county organization, its restriction of expenses to the budgeted amount of money available for its use, and its increase in membership, the administration proved its great worth to the Auxiliary. Mrs. Southgate Leigh, of Norfolk, Virginia, president of the Woman's Auxiliary to the Southern Medical Society, contributed greatly to the convention both by her talk at this meeting and by her presence at the various social functions. At this meeting the following officers were elected to serve for the year 1934-35:

President, Mrs. Willis Campbell, Memphis.

President-elect, Mrs. R. G. Reaves, Knoxville.

Recording Secretary, Mrs. B. F. Byrd, Nashville.

Treasurer, Mrs. W. F. Dorsey, Knoxville.

Historian, Mrs. Sidney Meeker, Memphis.

First Vice President, Mrs. W. W. Potter, Knoxville.

Second Vice President, Mrs. Edward Clay Mitchell, Memphis.

Third Vice President, Mrs. T. G. Pollard, Nashville.

Fourth Vice President, Mrs. W. S. Nash, Knoxville.

Directors, Mrs. W. R. Cate, Nashville; Mrs. W. E. Foree, Athens.

Other directors who will serve for another year are:

Mrs. W. C. Bilbro, Jr., Nashville.

Mrs. Carl Martin, Knoxville.

Mrs. W. T. Black, Memphis.

Mrs. Harry Schmeisser, Memphis.

Following the meeting luncheon was served at the Chattanooga Country Club, with about eighty ladies present.

The outstanding social feature of the

convention occurred on Wednesday evening when the committee in charge arranged an elaborate dinner for the guests in the beautifully decorated crystal room of the Read House. A unique floor show, to which several local artists contributed their talent, formed the chief entertainment of the party. Upon this occasion the new officers were installed during an impressive ceremony, with Mrs. J. L. Bibb serving as toastmistress. Also during this dinner party the cup, which had been offered by Mrs. Floyd to the county auxiliary making the greatest percentage increase in membership during the year, was awarded to Davidson County.

On Thursday morning Mrs. Willis Campbell assumed the active presidency of the Auxiliary and presided over the post-convention board meeting. At this time the following chairmen of standing committees were appointed:

Finance—Mrs. J. F. Fraser, West Tennessee.

Program—Mrs. Theodore Morford, Middle Tennessee.

Public Relations—Mrs. W. O. Floyd, Middle Tennessee.

Hygeia—Mrs. T. W. Coppage, West Tennessee.

Press and Publicity—Mrs. W. W. Wilkerson, Jr., Middle Tennessee.

Revisions—Mrs. W. A. Shelton, East Tennessee.

Legislation—Mrs. D. H. James, West Tennessee.

Parliamentarian—Mrs. O. G. Nelson, Middle Tennessee.

Ways and Means—Mrs. Dewey Peters, East Tennessee.

Archives—Mrs. Oliver Hill, East Tennessee.

## REPORTS OF LOCAL AUXILIARIES

### DAVIDSON COUNTY

Mrs. B. F. Byrd, President

The April meeting of the Auxiliary was held in the parlors of the Y. W. C. A., with Mrs. Byrd in the chair. The principal feature of the program was a paper by Mrs. Theodore Morford, entitled, "State Medical Laws." The paper treated of the ethics and

laws of medicine in the State of Tennessee in a concise and explanatory manner, so that the members present were enthusiastic about the results of Mrs. Morford's research.

### KNOX COUNTY

Mrs. H. E. Christenberry, President

The members of the Knox County Auxiliary met for the April meeting at the home of Mrs. R. G. Reaves. The meeting was in the form of the customary luncheon, which is so greatly enjoyed by the members. The convention was reported and commented upon, the members taking considerable pride in the election of Mrs. Reaves as president-elect of the State Auxiliary.

## NEWS NOTES AND COMMENTS

As a portion of its health educational program, the Medical Society of the State of Pennsylvania in the last few years has distributed more than 600,000 stickers to 3,000 family physicians. These stickers were supplied to the physicians who affixed them to monthly bills. The sticker reads as follows:

### WARNING

In the presence of abdominal pain  
Never give a laxative or physic  
Give nothing by mouth  
Call your family doctor

Abdominal pain, cramps, or soreness  
which lasts for four hours  
is usually serious.

This warning is published by The Medical  
Society of the State of Pennsylvania.

The Gyncecan Hospital Institute of Gynecologic Research of the University of Pennsylvania is conducting an intensive study of families into which congenitally malformed individuals have been born.

Special interest centers in families in which malformations have appeared in two or more children. Physicians who have knowledge of any such families are urged to communicate with Dr. Douglas P. Murphy, Gyncecan Hospital Institute, University of Pennsylvania, Philadelphia, Pa.



### CLEAN MILK AND SAFE MILK

Clean milk is milk which has been produced and distributed with the minimum amount of extraneous contamination such as manure from the cow's udder and flanks, dust from the cowshed and dairy, and dirt from the milker's hands, utensils, and milk containers. When care is not exercised, such contamination readily occurs and dirty milk results. Dirty milk is not only esthetically objectionable, but it also has poor keeping qualities, and for this reason alone reputable firms are anxious to obtain their supplies as clean as possible. Even if the dirt in milk contains no pathogenic organisms, the conditions which lead to dirty milk also favor contamination with any pathogenic organisms which may be in a position to gain access to the milk.

It must be noted, however, that a clean milk is not by any means necessarily a safe milk. Milk obtained from a herd infected with tuberculosis or contagious abortion is never safe, no matter how cleanly it may be procured. Cleanliness of the general milk supply is desirable but cleanliness is not enough.

To insure its safety, that is to say, its freedom from pathogenic organisms, **pasteurization is essential.** — J. M. Hamill, M.D., *American Journal of Public Health*, March, 1934.

### COOPERATION

Under the heading, "Thirty-Five Years Ago in Nashville," the following paragraph appeared in the *Nashville Banner* of Thursday, April 12, 1934:

Dr. Larkin Smith, City Health Officer, had reported 28,306 vaccinations against smallpox by Nashville physicians who had cooperated with the Health Department in this work. The work had been done at a cost of \$3,107, of which \$2,170 had been paid to the physicians and \$923 had been expended for vaccine points.

This affords an adequate answer to many of the slurs hurled at the medical profession by highly paid employees of government and institutions.

## MEDICAL SOCIETIES

### *Blount County:*

Future meetings are scheduled as follows:

May 17: "Herpes Zoster Ophthalmica," by Dr. K. A. Bryant. Discussion opened by Dr. G. W. Burchfield.

May 24: "Relation of Nephritic Hypertension to Heart Disease," by Dr. E. L. Ellis. To open discussion, Dr. L. C. Olin.

May 31: "Ruptured Silent Peptic Ulcer, with Six Case Reports," by Dr. C. C. Vincent. To open discussion, Dr. J. E. Carson.

June 7: "Foreign Bodies in the Air Passages," by Dr. A. M. Gamble. To open discussion, Dr. K. A. Bryant.

June 14: "Effect on Infant of Morphine Administered During Labor," by Dr. A. L. Jones. To open discussion, Dr. S. S. Kittrell.

### *Chattanooga and Hamilton Counties:*

May 17: "Cancer of the Breast," by Dr. E. Dunbar Newell.

May 24: "Treatment of Pelvic Infections," by Dr. E. H. Magee.

May 31: "Intestinal Obstruction," by Dr. H. Quigg Fletcher.

June 7: "The Failing Heart," by Dr. W. E. Bryant.

"Medical Education and Practice in European Countries," by Dr. Isbell.

### *Davidson County:*

April 17: "Mental Diagnosis of 500 Cases Charged with Crime," by W. Scott Farmer. Discussion opened by George M. Thomas, attorney at law.

April 24: "A Condition of the Intervertebral Disc," by Dr. George Carpenter. Discussion opened by Dr. J. J. Ashby.

May 1: "Guanidin As a Complicating Factor in Certain Diseases of Childhood," by Dr. Katherine Dodd. Discussion opened by Dr. James C. Overall.

May 8: "Primary Strangulation of Omentum, with Case Report," by Dr. C. S. McMurray. Discussion opened by Dr. M. B. Davis.

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*Hardin, Lawrence, Lewis, Perry, and Wayne Counties:*

The Five-County Medical Society met at Hohenwald, April 24, and had the following excellent program. The attendance was large, and all present enjoyed the meeting.

"Rational Treatment of Gonorrhea in Women," by Dr. L. C. Harris, Lawrenceburg. Discussion opened by Dr. D. L. Wood.

"The Blood Pressure," by Dr. J. P. Keller, Nashville. Discussion opened by Dr. T. J. Stockard.

"Transfusions," with motion pictures, by Dr. C. R. Crutchfield, Nashville. Discussion opened by Dr. W. E. Boyce.

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*Henry County:*

The Henry County Medical Society met March 27th at the county courtroom in Paris. In the absence of the president, the meeting was presided over by Secretary R. G. Fish.

A lively discussion on collection of past-due accounts was an important part of the meeting, and a committee will be appointed by the organization at the next meeting in April to further this discussion.

Dr. W. G. Rhea, Paris, had a paper on "Birth Control," which was well received.

The attendance was good, and considerable interest is developing in the society.

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*Knox County:*

April 17: "Prostate Resection," by Dr. Edgar Ballanger, Atlanta, Ga.

April 24: "Tetany," by Dr. Joe T. Smith.

April 31: "Accidental Injuries to the

Head," by Dr. Nicholas Pappas. Discussion opened by Dr. Walter Luttrell.

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*Obion County:*

A meeting of the Obion County Medical Society was held at the Palace Hotel, April 26.

Following the supper a program was given, and on this program were two important discussions by Memphis physicians. Dr. H. B. Totten discussed "Fundamentals in the Treatment of Diabetes." Dr. J. M. Dorris discussed "Management of Head Injuries."

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*Putnam County:*

"At a recent meeting of the Putnam County Medical Society, the physicians of the county unanimously agreed upon rules governing the disposition of delinquent or unsatisfactory accounts.

"The society adopted the rule that if a person fails to pay a bill or make some arrangement satisfactory to the physician, his name will be placed on the society's delinquent list and the person will not be able to obtain medical or surgical attention on charge account from any physician in the county, but must pay cash for all services until the bill has been paid, at which time his name will be removed from the list of unsatisfactory accounts. Worthy charity is excepted."—*Putnam County Herald*.

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*Sumner County:*

The Sumner County Medical Society met May 3, with Dr. Humphrey Bate, president, presiding.

Dr. Richard A. Barr, of Nashville, addressed the society.

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*Warren County:*

The Warren County Medical Society, at its regular meeting on April 26, reelected Dr. E. L. Mooneyham, of Rock Island, president, and Dr. John S. Harris, of McMinnville, secretary-treasurer.

Members who attended the meeting were Drs. Clark, Harris, Mooneyham, Trail, and



Rice. Drs. Boles and Mason were elected to membership in the society.

An essay committee consisting of Drs. C. M. Clark, J. M. Boles, and John Mason was appointed. Dr. Clark was selected to read a paper at the next meeting, the subject to be on "Acute Abdomen." Drs. Boles and Mason will open the discussion.

Owing to business pressure in business hours, the time of the meeting was changed to 7:30 P. M., and the future meetings will be held at the Magness Community House.

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#### *Washington County:*

On June 7th, the society will celebrate its thirty-first anniversary. Details of the program are being worked out and the occasion will be suitably celebrated.

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#### *Wilson County:*

Dr. C. C. Young will be the essayist at the meeting to be held on June 7th. Dr. Young will discuss "Arthritis."

## OTHER MEDICAL SOCIETIES

The forty-third annual meeting of the West Tennessee Medical and Surgical Association at Jackson, May 10, promises to be a good one. An excellent program has been published as shown below:

"The Exanthemata," by Dr. E. C. Mitchell, Memphis.

"The Sequellae of the Exanthemata," by Dr. Horton Casparis, Nashville. Joint discussion.

"Some of the Commoner Causes of Esophageal Stricture (slides), by Dr. Richmond McKinney, Memphis.

"The Care of an Obstetrical Case," by Dr. W. T. Pride, Memphis.

"Dry Clinical Pathological Conference, Two Cases," by Dr. J. B. McElroy, Memphis.

"Practical Points in the Recognition and Management of Abdominal Emergencies," by Dr. J. A. Crisler, Jr., Memphis.

"Indications and Contraindications for Operation in Acute Appendicitis," by Dr. Barney Brooks, Nashville. Joint discussion.

"Urological Problems that the General Practitioner Meets Every Day," by Dr. George R. Livermore, Memphis.

Presidential address, concerning reorganization of the State Department of Health, by Dr. Battle Malone, Memphis.

"Diabetes Mellitus," by Dr. Virgil E. Simpson, Louisville, Kentucky.

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## THE MIDDLE TENNESSEE MEDICAL ASSOCIATION

The seventy-ninth semiannual meeting of the Middle Tennessee Medical Association was held at Springfield, May 10 and 11. The following papers were read:

"Bronchial Asthma," Dr. J. R. Gott, Murfreesboro. To discuss: Dr. B. S. Rhea, Lebanon; Dr. Edna Pennington, Nashville.

"Recognition of Prostatic Enlargement," Dr. J. C. Pennington, Nashville. To discuss: Dr. Geo. Williamson, Columbia; Dr. C. F. Anderson, Nashville.

"Cancer of the Uterus; Is It Curable?" Dr. Lucius E. Burch, Nashville. To discuss: Dr. W. K. Sheddan, Columbia; Dr. H. M. Tigert, Nashville.

"Observations on Cancer of the Rectum, with Lantern Slides," Dr. W. D. Haggard, Nashville. To discuss: Dr. T. A. Patrick, Fayetteville; Dr. D. R. Pickens, Nashville.

Presidential address, "Lymphangitis," Dr. R. B. Gaston, Lebanon.

"Consideration of the State Medical Society's Bill to Reorganize the State Department of Health," Dr. John M. Lee, Nashville. To discuss: Dr. W. C. Dixon, Nashville; Dr. J. S. Freeman, Springfield.

"A Zoning Plan for Postgraduate Instruction Throughout the State," Dr. W. H.

Witt, Nashville. To discuss: Dr. J. O. Manier, Nashville; Dr. James Walker, Franklin.

"Intestinal Obstruction," Dr. R. A. Barr, Nashville. To discuss: Dr. W. T. Robison, Murfreesboro; Dr. L. W. Edwards, Nashville.

"Treatment of Decompensating Heart," Dr. O. N. Bryan, Nashville. To discuss: Dr. W. H. Avery, Shelbyville; Dr. David Hailey, Nashville.

"Primary Strangulation of Omentum, with Case Report," Dr. C. S. McMurray, Nashville. To discuss: Dr. W. W. Porter, Springfield; Dr. R. W. Grizzard, Nashville.

"Cancer of the Breast from the Standpoint of the General Practitioner," Dr. Thayer S. Wilson, Gordonsville. To discuss: Dr. T. R. Ray, Shelbyville; Dr. M. B. Davis, Nashville.

"Neonatal Mortality," Dr. M. S. Lewis, Nashville. To discuss: Dr. H. Weaver, Dickson; Dr. Sam Cowan, Nashville.

"Ophthalmology in General Practice," Dr. Fowler Hollabaugh, Nashville. To discuss: Dr. W. F. Fyke, Springfield; Dr. Robert Sullivan, Nashville.

"Indications for Operation in Cases of Cholecystitis," Dr. H. H. Shoulders, Nashville. To discuss: Dr. K. S. Howlett, Franklin; Dr. W. A. Bryan, Nashville.

Clinical Interpretation of Blood Examinations," Dr. Wm. R. Cate, Nashville. To discuss: Dr. S. J. Fentress, Goodlettsville; Dr. J. O. Manier, Nashville.

"Infant Feeding," Dr. Frazier Binns, Nashville. To discuss: Dr. W. B. Dye, Springfield; Dr. Hearn Bradley, Nashville.

"Cancer of the Colon, with Lantern Slides," Dr. J. D. Lester, Nashville. To discuss: Dr. Matt Murfree, Murfreesboro; Dr. W. O. Floyd, Nashville.

"A Splint for the Fracture of the Superior Maxillary Bones, with Lantern Slides," Dr. Walter M. Morgan, Nashville. To discuss: Dr. W. D. Haggard, Nashville; Dr. J. F. Adams, Woodbury.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Metycaine in Spinal Anesthesia. Wm. R. Mecker, M.D., and P. L. McCreary, M.D. American Journal of Surgery. April, 1934.

Metycaine is the hydrochloride of gamma (2 methyl-piperidino) propyl benzoate. It is an odorless crystalline powder, is readily soluble in water, does not deteriorate by boiling, and is compatible with adrenalin. It can be used topically on mucous membranes as efficiently as cocaine. It can be used locally in the same manner as novocaine.

A series of twenty-five operations is presented, covering a wide range, mostly abdominal, in which metycaine was used as a spinal anesthetic. The method followed that of Labat. The quality of anesthesia was excellent in all except two cases, and in neither of these was artificial respiration demanded. There were some cases of nausea during anesthesia, and after effects included three cases each of nausea and headache.

The authors believe that metycaine gives as satisfactory results in spinal anesthesia as novocaine. The dose of 100 mg. administered according to the technique of Labat is the equivalent of 120 to 150 mg. of novocaine administered in a similar manner.

### DERMATOLOGY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

Common Skin Diseases, with Especial Reference to Their Treatment. Charles B. Campbell, M.D. Medical Annals of the District of Columbia. March, 1934.

The author states that, realizing the importance of correct diagnosis and treatment of skin conditions, he has prepared this paper. It deals with common skin diseases, with especial reference to their treatment.

He states it is a well-known axiom that we pay the least attention to those things we are most accustomed to seeing. This is true of the skin. Generally it is considered just a covering of the body when, in fact, it is an important organ with true physiological functions. When the skin becomes disordered the whole body becomes affected.

He enumerates a group of eleven skin diseases which include fifty-seven per cent of all diagnoses. This is for nearly one million published cases, extending over a period of fifty years of modern dermatology. The percentage incidence of the most common diseases of the skin is as follows: eczema, 21 per cent; acne, 10 per cent; urticaria, 5 per



cent; scabies, 5 per cent; dermatitis venenata, 5 per cent; psoriasis, 4 per cent; impetigo, 3 per cent; ringworm, 3 per cent; alopecia, 1 per cent; seborrhea, 4 per cent. There are over two hundred skin diseases. To know their pathology, histology, diagnosis and treatment makes a dermatologist a real specialist. But these eleven skin diseases comprise fifty-seven per cent of the cases. If the internist, pediatrician or surgeon would learn the characteristics and symptoms of just eleven dermatoses, he would be able to treat three-fifths of all cases that come under his care.

Radiotherapy and other physical agents are great aids in the treatment of skin diseases, but he purposely omitted these since he was appealing to the general practitioner. Treatment of each of these conditions has been very well outlined.

Note.—Although eczema heads the group at 21 per cent and ringworm at only 3 per cent, I am of the opinion that if all cases were reported fungus infection would head the list at about 75 per cent.

### OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

Choice of Operation for Cataract on a Previously Trephined Eye. R. H. Elliot. *Archives of Ophthalmology*. April, 1934.

Cataract associated with glaucoma is always a difficult problem. The first signs of opacity are seen in the depth of the lens and can therefore be recorded as being independent of any interference with the capsule, though it is possible that the lenticular nutrition is interfered with. One of the complications in this form of cataract is that the cataract is rarely mature; the optic nerve has been damaged to some extent and conditions are not as favorable for operation as in the usual case of cataract. The most important consideration is the necessity of avoiding interference with the filtering scar, and Colonel Elliot has endeavored to find a suitable technic. The problem, he states, has been made more difficult by the fact that since 1920 he has included a conjunctival bridge as a routine in all operations for cataract. The objection to a wholly corneal incision is that there is delay in the healing of the section. The following method was finally decided on: One transfixes the cornea in the usual way with the cataract knife, cutting out along the sclerocorneal margin until nearly clear of the filtering pad and then making a broad bridge either upward and outward or upward and inward, thus coming to the outer or inner side of the filtering scar. This is much more difficult than the ordinary bridge; while a conjunctival bridge is made with comparative ease, it is often difficult to get it exactly where one wants it, as is the case in eyes with a filtering scar. If the operation succeeds, the bridge will furnish protection from escape of vitreous, insure immediate

closure of the wound by the strap-like action of the conjunctival bridge and result in early and complete healing of the whole incision without interference with the filtering scar.

The time to operate on a cataract following glaucoma arises when vision is no longer useful. The prognosis is necessarily less favorable in these cases than in the ordinary case of cataract.

### PEDIATRICS

By JOHN M. LEE, M.D.  
Doctors Building, Nashville

Acute Poliomyelitis. Therapy by Blood Transfusion from Immune Donors. Irving Sherman, M.D., Brooklyn. *Amer. Jour. Dis. Children*. March, 1934.

The use of immune serum in the treatment of poliomyelitis has proven unsatisfactory. The author felt that transfusion from donors who had recovered from the disease would be more effective because: (1) Blood by direct transfusion does not undergo changes that may befall serum secured some time before it is used. (2) Larger doses are possible. (3) Transfusion gives the patient not only serum, but leucocytes, and perhaps other blood elements potent for increasing resistance of recipient. (4) The causative agent of the disease is carried in the blood stream to the brain and meninges. Hence it would appear logical to introduce the immune bodies into that stream.

Seventy-one patients were transfused with 150 to 400 cc. blood from immune donors, about half being in the preparalytic stage, the remainder having more or less of paralysis. In this group the mortality rate for preparalytic cases was 2.8 per cent, while in the paralytic cases it was 11 per cent. In cases treated with serum the corresponding figures were 10 per cent and 20 per cent, respectively. In the transfused preparalytic cases 8.8 per cent had subsequent paralysis, while 50 per cent of preparalytic cases receiving immune serum developed paralysis.

The effect of transfusion on the fever, prostration, disturbance of sensorium, headache, vomiting and general state of toxemia was strikingly beneficial, these symptoms being abated much earlier than in cases treated otherwise, and often these symptoms subsided shortly after transfusion, by crisis. The author thinks this the method of choice in the treatment of poliomyelitis.

### SURGERY—GENERAL AND ABDOMINAL

By ROBIN F. MASON, M.D., F.A.C.S.  
735 Medical Arts Building, Memphis

Tumors of the Salivary Glands. J. D. Martin, M.D., Daniel C. Elkin, M.D., Atlanta, Ga. *Archives of Surgery*. April, 1934, Page 727.

The so-called mixed cell tumor of the salivary glands constitute a large portion of lesions of the face and neck.

These growths cannot be definitely separated from true malignancy.

They have been called fibromyxoma, myxoma, adenoid cystic epithelioma, etc., according to their appearance.

#### THEORIES OF FORMATION

These growths may be considered to be (1) epithelial, (2) fibroendothelial, (3) fibroepithelial, in origin.

These tumors were originally considered carcinomas by most pathologists, but Cohnheim and others thought them remnants of branchial arches. Then they were regarded as of dual origin, coming probably from ectoderm and mesoderm.

The epithelial theory is generally accepted in this country, though not universally approved.

#### INCIDENCE

These tumors are found most often in the fourth decade, though our series comprise patients from 26 to 76. Our series are about equally divided between the sexes. Most of them were found in middle-aged people, because at this age the growth usually becomes active after having been quiescent for from 2 to 20 years.

#### PATHOLOGY

These tumors should be divided into two main groups—one, in which mesoblastic tissue predominates, and the other in which there are more cellular elements.

The former are of long standing, while the latter are active. Both varieties are usually encapsulated, but the second type is much softer to the touch.

Both may be and usually are more or less movable.

#### CLINICAL COURSE

Mixed tumors, when first noticed, are small, and are thought to come as a result of trauma or septic parotitis. They remain quiescent in many cases for years, when, without apparent reason, they begin to grow rapidly.

If removed early the tumor is manifestly benign, frequently, and there is no recurrence. If removal is incomplete, there is usually a recurrence within two years.

#### TREATMENT

Complete, early surgical extirpation, followed by radium and X-ray.

#### COMMENT

The authors report 21 cases, of which 11 were definitely benign. The remaining 10 were of low grade malignancy. There were recurrences in 10 despite surgery, etc.

Twelve patients are still living, though several have had recurrences. Thus the prognosis is not good, recurrence having taken place in more than two-thirds of the cases.

The recurrent growth following the removal of the original tumor is more malignant than the original growth.

## UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
Medical Building, Knoxville

Acute Abdominal Diseases with Genito-Urinary Symptoms and Genito-Urinary Diseases with Abdominal Symptoms. Nathan Blaustein. Urologic and Cutaneous Review. February, 1934.

Acute abdominal diseases with genito-urinary symptoms may be due to primary disease of genito-urinary organs or to secondary irritation consequent to diseases of other organs.

The main confusing genito-urinary symptoms are:

1. Painful swelling in kidney area.
2. Renal colic.
3. Disorders of micturition, pain, frequency, retention.
4. A normal urine.
5. Pain in testicle or spermatic cord.
6. Tenderness at costal angle.

Pyonephrosis, or hydronephrosis, may be confused with abdominal diseases. Polycystic kidney may give rise to abdominal distention, vomiting, uremia, and may be mistaken for intestinal obstruction.

Renal colic may be caused by:

- a. Appendicitis.
- b. Renal stone.
- c. Ureteral stone.
- d. Blood clot in ureter.
- e. Dietl's crisis.

Acute appendix may be associated with frequency and dysuria due to a low-lying appendix. Frequency of urination is usually due to peri-appendicular inflammation. This is more frequent in males than in females because of the intervention of uterus and broad ligaments.

Dysuria is present in about one case of every ten of appendicitis.

Retention of urine is uncommon and is due to irritation of bladder sphincter. When a perforated appendix happens to lie upon the quadratus muscle, costo-vertebral pain may be present. Pernephritic abscess may also confuse the diagnosis.

Hematuria has been reported with appendicitis, but seldom occurs.

Testicular pain occurs in about 5 per cent of appendicitis, and is probably due to sympathetic nerve involvement just the same as left-sided pain in appendicitis.

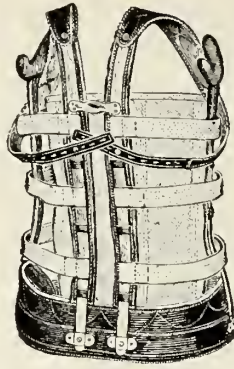
Retraction of the testicle is due to irritation of genitocrural nerve.

Torsion of the imperfectly descended testicle may cause extreme pain in the inguinal region and simulate appendicitis.

Abdominal pain may be due to distention of bladder.

Renal symptoms may be caused by any retroperitoneal lesion in the renal area, such as perforated duodenal ulcer, or perforation of common bile duct.





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### ANGINA PECTORIS AS RELATED TO CORONARY DISEASE\*

E. A. GUYNES, M.D., Knoxville

CARDIOVASCULAR disease is responsible for more deaths than any other known disease.

The increasing importance of heart disease as a cause of disability and death has in recent years become a common knowledge to the general public as well as to the medical profession. Toward the end of life's journey, we find coronary disease a very important cause of heart disease. The principal reason for the importance of coronary disease is that it cripples and often kills in the prime of life.

There is much evidence suggesting that angina pectoris, associated with arteriosclerosis of the coronary arteries as well as thrombosis of the coronary arteries, is becoming more frequent. Many famous clinicians of the nineteenth century remarked on the rarity of angina pectoris. In Germany, Bamberger wrote that it was one of the rarest symptoms of heart disease. He had seen only six when he published his book in 1857. In the year of 1845, of 5,171 deaths in Hamburg, only three were attributed to angina pectoris. In Great Britain, this syndrome seems to have been more common, for such men as Latham and Stokes write as though they had seen many cases, yet as recently as 1896, Balfour, the distinguished consultant of Edenburg, wrote that he had seen ninety-eight cases of angina pectoris in ten years. In the United States, Flint found angina pectoris a rare disease. He encountered only fifteen cases

in 338 consecutive cases of heart disease. Osler, in 1897, had seen only forty cases of true angina pectoris. Today every internist sees these patients in far greater number.

This discrepancy can be partly explained by greater precision in diagnosis. The increasing custom of special cardiologic examination, and especially the recognition of the value of electrocardiographic examination in the diagnosis of coronary disease, brings many more of these patients to the office of the specialist than in former generations.

Many authors are of the opinion that the great stress and hurry of modern life has brought about a greater frequency of disease of the coronary arteries. In support of this assumption, they point out that it is encountered especially among the well-to-do and men of big affairs and great responsibilities. It is assumed that the strain of modern business and professional life in some way leads to early degenerative change in the coronary arteries. Phillips speaks of angina pectoris occurring in people who work with their brains at high pressure. It has often been referred to as doctors' disease.

Angina pectoris was first fully described by Heberden in 1782. It is characterized by paroxysmal attacks of agonizing pain over the sternum, radiating to the left shoulder and arm. It may be felt as a pain or numbness, even to the wrist or fingers, and often accompanied by a sense of impending death.

There have been collected from the litera-

\*Read before the Tennessee State Medical Association, Chattanooga, April 10, 11, 12, 1934.



ture eighty reasons or theories concerning the causes of angina pectoris. Regardless of the accumulated mass of literature relative to the etiology, pathology of angina pectoris and its relation to coronary disease, yet it continues to be a much debated question.

Sir Clifford Allbutt says that angina pectoris is a disease and not merely an entity or syndrome. He attributed the symptoms in 90 per cent of cases to disease of the thoracic aorta, especially of its outer coats. Mackenzie regards exhaustion of the heart muscle and its association with coronary artery disease and myocarditis as the basis of the symptoms. By some it has been held that anginal pain arises directly out of spasm of the coronary arteries.

The mechanism of angina pectoris is not definitely known. However, from this standpoint it is very illuminating to consider its close relation to a well known and clearly understood condition—coronary thrombosis. The two are closely connected in two ways. In the first place, about 50 per cent of all the cases of coronary thrombosis are preceded by attacks of angina pectoris; second, the symptoms of angina pectoris are usually the same in character and position as those of coronary thrombosis, though the former is paroxysmal and brief and often less severe. These facts strongly support the theory of the coronary origin of angina pectoris.

According to Keeper and Resnik, a critical analysis of the theories that attribute angina pectoris to coronary spasm, to disease of the aorta or to myocardia exhaustion, demonstrates that these views are open to such serious criticism that they become unacceptable. It can be shown, moreover, that anoxemia of the heart explains every characteristic of angina, including the likelihood of sudden death, which must be considered a feature in this condition.

The immediate cause of angina pectoris is an insufficient coronary circulation, an inability to maintain a blood flow to the myocardium capable of supporting it under greater or lesser strain, even under the usual efforts of quiet existence. In other words, a true anginal attack may be ex-

pressed as an outcry of a hungry heart muscle when the blood supply has either been suddenly diminished or an increased demand cannot be met, giving rise to myocardia ischemia. The more widely accepted view is that pain is of a muscular origin; just how this acts upon the nerves' ending and centers is not known, but aching and pain may be produced in any muscle by shutting off or limiting its circulation, especially if actively contracting. The more the coronary is limited the less exertion is needed before angina pectoris ensues, but usually it is not possible to attain such a high degree of exertion because of other limiting factors, like breathlessness and general muscular fatigue.

**Pathology:** There may or may not be any evidence of cardiovascular pathology in angina pectoris. In the vast majority of cases—at least 95 per cent—there is some coronary disease, usually sclerosis and narrowing of the lumen, especially involving the descending branch of the left coronary artery. There may be a partial or complete occlusion of the mouth of the coronary arteries by a luetic aortic inflammatory process. In such cases, the coronary arteries beyond their mouth may be normal, although aortic disease, atheroma or luetic aortitis is commonly found with angina pectoris. It is less universal than are coronary artery lesions. On the other hand, extensive aortic and coronary artery lesions are frequently found at post-mortem examination without a history of angina pectoris.

**Symptoms:** Angina pectoris is the name given to a group of symptoms that in typical cases permit easy recognition.

While the initial attack may be ushered in like a bolt from a clear sky, that is not the rule. Antecedent history of discomfort across the upper part of the chest on making some sort of effort which had previously been accomplished with perfect ease, is often obtained. These minor attacks are usually overshadowed by the first major attack, which the patient believes is an entirely different condition. In reality, this is but a progression of the initial symptoms. The patient is usually an adult male, on effort such as walking has a sense of tight-

ness or pressure in the sternal region which may become an agonizing pain, radiating to the neck, shoulders and arm, especially the left arm. It may be felt as a pain or numbness even to the wrist or fingers. His suffering and his consciousness of the gravity of the condition, a sense of impending death, compels him to stop. He stands or sits, seldom lying down. In a few seconds or minutes the pain being suddenly relieved and he is able to walk, though slowly. These attacks are especially likely to recur after a heavy meal or if the attempt is made to walk up an incline or against a headwind, excitement or a fit of anger may bring them on. They tend to become more frequent and severe until the sufferer is greatly restricted in his activities. Sudden death may occur in any attack. There are no signs of angina pectoris, which is entirely a symptom based on disturbance with or without clinical evidence of organic disease. Twenty-five per cent of all cases of angina pectoris show apparently normal heart by all methods of examination inspection, palpation, percussion, auscultation, blood pressure study. In the study of angina pectoris, the X-ray and other special studies reveal little of value except that roentgenology may show the presence of early luetic aortitis as a possible factor and a positive Wassermann reaction may suggest the possibility of luetic involvement of aorta. Signs of congestive heart failure and auricular fibrillation are rare in angina pectoris.

**Diagnosis:** From recent observations made by careful investigators, one concludes that the occurrence of the symptoms of angina pectoris in an individual is a warning as to the condition of the coronary arteries. It is for this reason that an early diagnosis is especially important.

It is to be emphasized that angina pectoris is to be diagnosed from the history and symptoms rather than from physical signs. The major attacks of angina are preceded in many instances by experience of trivial substernal pain or oppression provoked by exertion or emotional excitement. These attacks are relieved by rest and show a tendency to increase in severity with each recurrence. Such a history given by an indi-

vidual above forty years of age should make one suspect coronary disease.

Before diagnosing angina pectoris, other conditions must be considered which cause chest pain, such as pleurisy, pneumonia, pericarditis, aneurism, tabes, cervical and dorsal arthritis, ulcer of stomach, gallstone, and coronary thrombus.

It is not necessary to consider most of the above conditions in detail, as, with a careful history and a physical examination supplemented by X-ray of the chest and spine, you will be able to exclude them.

This discussion will be limited to the last two of the conditions cited, namely, gallstone colic and coronary thrombosis. The differentiation between an attack of gallstone colic and angina pectoris is very easy in typical cases, though I have seen patients during acute attacks of pain when it was impossible to differentiate the two conditions. In certain cases of gallstone colic, the pain may be referred to the chest in the region of the sternum; on the other hand, angina pain may be referred to the epigastrium. In both cases there is belching of gas and vomiting. In gallstone colic there is no sense of constriction of the chest as is usually in the case of angina pectoris, and on the day following the attack tenderness over the gall bladder or the presence of bile pigment in the urine makes the diagnosis of gallstone colic unmistakable.

Coronary thrombosis may occur very slowly or very suddenly. With occlusion of the main vessels, it is immediately fatal, but if only a small branch is involved, the patient may survive. Should the occlusion take place gradually, there are no acute symptoms. The picture is one of myocardium failure, and the symptoms are those of a progressively increasing congestive heart failure. With sudden occlusion, the symptoms are acute, serious and dramatic. The attacks with which we are most familiar begin suddenly, while the patient is at rest. They occur at times during sleep, and occasionally after a full meal, and in this respect differ from the onset of angina pectoris, which follows exercise or emotional strain. The pain is sudden and usually referred to the lower sternum or to the epi-



gastrium. It increases in intensity and spreads to the upper sternum to the precordium, to the left or right arm. It may be referred to the back, neck, or jaw. In some patients the pain is referred entirely to the abdomen, resembling that occurring in acute pancreatitis, cholelithiasis, or perforating peptic ulcer. The pain is described as burning, boring, cramping, or vice-like in character; it cuts off the breath and makes breathing difficult. It lasts for hours at a time and is uninfluenced by nitrites. The victim is restless, tosses about in bed, or is up walking about the room; he cannot keep still. There is marked mental anguish, the skin is cold and clammy, and sweat covers the body. True dyspnea does not occur early except in those patients who show marked heart failure, but difficulty in breathing is an outstanding complaint. In attack, death may occur suddenly within a few minutes or hours, or recovery may take place.

Those patients who survive the attack exhibit a striking series of changes. A fall in blood pressure is most noticeable in those who have had hypertension. The heart rate increases and as a rule remains regular, but various types of irregularity may occur, such as paroxysmal tachycardia, auricular fibrillation, double beats, extra-systole, heart block or ventricular tachycardia. Within twenty-four hours a pericardial friction rub, which is of short duration, may be heard over the base of the heart; a leucocytosis, from ten to twenty thousand, comes on within a few hours and persists for several days. The patient often is delirious and a rise of temperature to 100 or 102 is very common.

The electrocardiogram is of much value in establishing a diagnosis and making a prognosis. In many cases typical and characteristic changes are observed, although it must be remembered that a few patients with coronary thrombosis may have a normal electrocardiogram.

Prognosis: The prognosis of a case of angina should always be guarded. It depends upon four factors: (1) early diagnosis, (2) organic change present, (3) rate of progression, (4) cooperation of patient.

Death may occur in the initial attack or any time thereafter; frequently life is prolonged for many years. In some cases a period of two to three years intervenes during which time the individual is entirely free from attacks. Some patients have suffered from angina pectoris from five to twenty years and then died from some other disease.

A very carefully controlled life may add a good many years to the expected limit, while carelessness and disregard may end life quickly.

Treatment: Since angina is caused by a condition fundamentally organic in nature, we must not be too enthusiastic as to the results that will follow any line of treatment one may formulate. While we can usually do little in removing the underlying cause of the attacks, much can be done in alleviating the severity of each attack and lessening their frequency. While the changes that produce angina are progressive, yet in some cases by encouraging the establishment of the collateral circulation or increasing the carrying capacity of the neighboring coronary vessels we may still be able to conserve what is left of the heart's resources, so that the patient may live a fairly useful life, although not as active as previously.

Treatment of angina pectoris resolves itself into treatment of the attack and treatment of the patient in the intervals. For the attacks, quickly acting vasodilators, such as amyl nitrite and nitroglycerine, are indicated, unless the blood pressure be low, when they apparently are ineffective.

If the nitrites do not relieve the pain, or if they cannot be used on account of some contraindication, morphine may be given, 1-4 gr. hypodermic; before relief is obtained, it may be necessary to repeat the dose of morphine until one grain has been taken. This drug gives excellent results, giving relief and much-needed rest for many hours. Whiskey or brandy is beneficial, often of great help in producing peripheral dilatation, thus terminating the attacks. Atropine sulph., 1-150 gr., has been used for the same reason.

Treatment between attacks: The importance of rest cannot be overemphasized. It is important that the patient remain in bed

from one to four weeks if the attack has been severe, and especially if there is evidence of impairment of the myocardium. In many cases the occurrence of angina attacks requires a modification of the daily routine of life.

Over strenuous activity and speed mania must be curtailed, hours of work reduced, loads of responsibilities lessened, worries eliminated so far as possible, shorter work days, longer vacations, relaxation, more sleep. Tobacco in excess is regarded as harmful. Some doctors forbid it entirely; alcohol in moderation may be allowed and is beneficial; meals should not be heavy food, but simple; rest or sleep after meals is beneficial. Often patients desire explicit directions as to exactly how much they may do. Often the answer may be given that the patient may walk as far as he can. If he can walk a mile at a moderate gait without a paroxysm, he may do so. If he cannot, it is not permissible, and so as to other activities. He must keep within his limit. Details of work and play must be discussed as individual matters and not according to some fixed rules.

The patient should have an initial period of rest for several months before attempting to resume even in some measure his former activities.

Among the drugs the use of which is advocated to prevent attacks: Theobromine compound, diuretin, theocalcin, euphyllin, etc., in some instances seem to be of definite benefit. Potassium iodide has been used for a long time, but I have never seen any value from its use except in the case of syphilitic patients. In such cases, chief reliance should be placed on mercury and potassium iodide. Arsphenamine, if used at all, should be given in very small doses. The unfortunate experience of many physicians as well as myself led me to abandon its use entirely in cases of syphilitic aortitis.

Within the past five years there has been a gradually increasing literature regarding operative procedure for the relief of angina pectoris. The operative procedure has been divided by Kappis into five groups: (1) resection of the middle and lower cervical sympathetic chain and the upper thoracic

ganglion; (2) resection of all three ganglia of the left cervical sympathetic chain; (3) resection of the main trunk and superior cardiac branch of the superior cervical ganglion; (4) severing of the depressor vagi; (5) severing of the depressor vagi and extirpation of the lower half of the left superior ganglion to the lower half of the middle ganglion.

It is true that this operative procedure results in the relief of the pain, but they have no beneficial effects on the underlying pathological process. Furthermore, they remove the warning signal to avoid over-exertion.

A course of Nauheim baths is of great benefit. Dr. Henry B. Schookler of the Mount Sinai Hospital has been employing them for many years with very favorable results.

"Angina pectoris can be practically cured in its early stages, and kept in abeyance later by palmeologic treatment. The author has completely arrested such cases by giving one or more courses of artificial Nauheim baths. In more cases the second course is required after the lapse of some years. As a rule it produces a still more lasting result than the first. The bath produces dilation of all the skin vessels, a drop in blood pressure, and a relief of vascular spasm much more lasting and general than the nitrites, without any of the disagreeable head fullness, throbbing and headache. They also slow and strengthen the heart action."  
—L. T. Thorne, Practitioner, June, 1924.

#### DISCUSSION

DR. J. B. HENDERSON (Crossville): About two years ago, at the Cincinnati Academy of Medicine, I heard a paper on the Thebesian Circulation. In this paper it was brought out that this circulation, which is a system of small canals or spaces between the heart muscle fibers, often takes the place of a circulation impaired by coronary thrombosis or sclerosis. So that, if you give a patient suffering with coronary disease, particularly sclerosis or thrombosis, with their associated pain and discomfort, sufficient time to allow for a gradual dilatation of the thebesian canals, you may be able to alleviate his suffering and possibly give him freedom from symptoms altogether.

That is, if a patient having anginal pain and discomfort, which is unrelieved by usual medical care, is put to bed for six weeks, very often the symptoms subside. This allows for a gradual



dilatation of the thebesian canals so that the heart muscle receives its nourishment directly from the heart cavity.

This offers an explanation for cases which come to autopsy, from irrelevant causes, showing coronary sclerosis or thrombosis which apparently are quite sufficient to cause death or great suffering, but which, apparently, caused no subjective symptoms to the patient before death.

DR. J. L. BIBB (Chattanooga): The doctor mentioned some of the causes of angina and why we have so much angina now. He left out one thing. The life expectancy of a newborn baby a hundred years ago, as you know, was thirty years; it is now fifty-five. Therefore, we have so many more adults who come up into the angina age.

All of us, as practitioners, should get this thing straight in our minds as to the difference between angina and coronary thrombosis, because as long as you practice you are going to have to deal with it, and you are going to have to deal with it more and more as the years go on, not just because the strenuous life increases the chance of this accident, but because increased longevity brings more people up to angina age. Therefore, it is very important that we get clearly in our minds a very definite differential diagnosis between angina and coronary thrombosis. You say, why? Because the treatment for one will often kill the other, and I don't think we appreciate that enough. You often see

a man who has had a definite coronary thrombosis with a blood pressure way down below 100, and yet the doctor is still giving him nitroglycerine and amyl nitrite. I know of one case that suffered almost continuously for four days and had 235 ampules of amyl nitrite. He had, of course, a coronary thrombosis, and those things couldn't do anything but harm.

I am glad he said what he did about the cause of retrosternal pain. After all, isn't it just a question of the disproportion between oxygen demand and oxygen supply?

I am also glad of what he said about xanthine base diuretics and their ability to increase coronary flow. It has been my custom to try to switch from one to another. If theocalcin, theobromine, or metaphyllin doesn't give relief, switch around; but I do believe that in mild angina a little something for the nervousness helps. The old theominal tablet is hard to beat, because these patients do have a great deal of nervousness.

I am glad of what the doctor just said about the establishment of collateral circulation. Isn't that the reason that older people after sixty can get along fairly well, as long as they take care of those hearts with angina? They already have established a fair amount of collateral circulation.

I do not altogether agree about the treatment of cardiovascular syphilis. Personally I think bismuth is a great drug for that branch of this trouble.

## THE EMOTIONS AND THEIR RELATIONSHIP WITH THE ENDOCRINE GLANDS

CARROLL CONWAY TURNER, M.D., Memphis

WECHSLER reminds us that the subject of clinical endocrinology and its associated neurological manifestations may be divided into three parts. The first part about 75 per cent belongs to the realm of phantasy and fiction. The second part about 15 per cent to 20 per cent is speculative and theoretic. The third remaining 5 per cent to 10 per cent comprises what we actually know of endocrinology and its associated disorders. To this latter belong the following facts. That there is a reciprocal relationship between the glands of internal secretion and both the vegetative and the cerebrospinal nervous system. It is not definitely known in some instances which of these primarily influences the other. Phylogenetically, the nervous system is the older set of organs, and a study of some of the lower forms of life shows a total absence of the ductless glands.

The subject at hand is too vast and time does not permit a presentation of all the intimate details of the relative structures concerned. We feel the urge to digress at this point long enough, however, to recall to mind the general arrangement and function of the vegetative nervous system and to stress a few salient features concerning the role it plays in mental, physical and vegetative life. The vegetative nervous system enervates smooth muscle and glands. The impulses of this enervation arise in the central or cerebrospinal nervous system. These impulses must be mediated and routed to the organs subserved by them in such a way that these organs may not be overstimulated or understimulated suddenly. This mediator is the vegetative nervous system, and in this role it has been likened by Cannon to a "transformer" system. It consists of two chains of grouped vegetative neurones or ganglia, lying on either side of the neuraxis and situated lateral to the spinal column and in the skull. These ganglia receive nerve fibres, or white

rami, from cells within the central nervous system, which are situated in definite locations as follows — the midbrain, medulla and cord. These white rami are called preganglionic fibres, and they synapse with cells within the outlying paravertebral and intracranial ganglia of the vegetative neurones. These secondary neurones give off gray rami or postganglionic fibres destined for the organs subserved by the vegetative system. This system works automatically and is not under control of the will power. It is known to be stimulated as well as inhibited by pleasant and unpleasant feelings and by the secretions of the ductless glands. Familiar results are raising of hair, excessive or depressed flow of saliva, dilatation of the pupils, blushing, sweating, involuntary ejection of urine, excess lacrimation, rapid pulse, increased choppy breathing and physical reactions of defense. The vegetative nervous system is divided into two physiological components. These components act antagonistically to each other throughout their entire distribution. Each of these components has a definite anatomical origin and distribution, and it is to this anatomical situation that these components owe their names, the craniosacral system and the thoracolumbar system. The cranial portion of the system includes a portion of the third or oculomotor nerves, the glossopharyngeal and vagus nerves and the nervus intermedius of the seventh nerve. The sacral portion consists of the pelvic and erigens nerves which arise from ganglia, whose preganglionic fibres arise in the last three sacral segments of the cord. The craniosacral division is referred to as the autonomic or parasympathetic nervous system. The thoracolumbar division arises from the lateral gray column within the cord from the last cervicle to the first lumbar segments, inclusive. This division of the vegetative system is referred to as the sympathetic, or orthosympathetic, sys-



tem. It regulates tone and posture of the skeletal muscles and motivates the dilator of the pupil, sweat glands and pilomotor reflexes of the skin. It constricts the blood vessels and sends impulses to motivate cardiac contraction. It subserves the motor function of the small intestine, dilates the stomach, controls liver secretion and metabolism and enervates the ductless glands. The craniosacral or parasympathetic division constricts the pupils, slows the heart rate and motivates the stomach and first third of the colon, through the oculomotor and vagus system. In the pelvis it influences excretion of urine and feces, uterine contraction and engorgement of the veins of the external genitalia.

According to their autonomic-sympathetic balance, certain individuals show physical signs and temperament which speak for a preponderance of activity of one or the other of these systems. Eppinger and Hess gave to these individuals the terms vagotonic for the autonomic or parasympathetic individual and sympathetotonic for the orthosympathetic individual. Each of these individuals shows certain characteristics common to their particular kind of vegetative imbalance. The vagotonic type has a deficient suprarenal activity. He is reserved and cold-blooded with pallid skin, deep-set eyes with small pupils, low blood pressure and slow pulse. He sweats easily and has cold clammy hands and feet. He has gastric hyperacidity and is subject to asthmatic bronchial spasm and spastic constipation and diarrhea. His sugar tolerance is high and the blood shows a tendency to easinophilia. He is sensitive to atropine and pilocarpine and the oculocardiac reflex is prompt. He does not readily respond to fear or anger.

In sympathetotonic individuals, on the other hand, there is preponderating activity of the suprarenal glands. He is lively and excitable. The palpebral fissures are wide, the pupils dilated, and the skin is ruddy in color, warm and dry and there is a deficiency of acidity in the gastric juice. Sugar tolerance is low, and there is marked sensitiveness to adrenalin, thyroid secretion and pituitrin. The oculocardiac reflex is diminished or absent, but the ciliospinal

reflex is active. Vagotonia or sympathetotonia may be family stigmata and this may explain families who follow definite patterns in their disposition, affectivity, responsiveness and tendencies to allergic conditions as well as sensitiveness to certain groups of drugs.

Just as there is often a sympathetic-autonomic imbalance, so also may there be an endocrine imbalance, resulting from overactivity or underactivity of one or more of the ductless glands. Here again the individual types according to his endocrine inheritance and activity. We look for and expect similar psychic patterns and reactions in individuals of similar physical characteristics. Since the ductless glands have to do with bodily development, metabolism and energy, they must exert their influence also on the affectivity or feeling states. Berman has studied the ductless glands from the standpoint of their regulating personality and has typed or grouped some of the outstanding historical personages according to their apparent endocrine activity. Some of his data is conjectural and based on word pictures of these personages' physiques and mentality by their biographers. Additional data has been obtained from records of personal physicians, and, as in the case of Napoleon, from the protocols of the actual autopsy findings. Thus he characterizes Napoleon Bonaparte as the pituitocentric — small of stature, with delicate hands and small feet, combative by nature, ruthless in egotism and suffering frequently with headaches and attacks of vomiting followed by collapse and protracted periods of somnolence. He had little real sentiment, showing decreased activity of his posterior pituitary, and his love life is said to have been only a means of gratification of his insatiable ego. Florence Nightingale was of the thyro-pituitocentric type. Tall, gaunt and of eunuchoid build, capable, energetic, ironical but not magnetic. Oscar Wilde was of the thymocentric type, tall with soft, smooth skin and scant facial hair, corpulent, puerile with high-pitched voice and sentimental. The usual thymic inhibition of the gonadal development probably accounted for his homosexual tendencies. Darwin was neuras-

thenic, despondent, fatigued quickly and suffered seasickness in his travels. He lacked physical energy and had a very slow pulse. His ability probably resulted from compensatory thyroid activity attempting to supply what his adrenals could not. He suffered profound depression and hinted suicidal tendencies when he wrote to a friend that his "life had become a curse and a burden beyond which he could endure."

The James-Lange theory indicates that the emotions result from the secretions of the ductless glands. The intensive, hair trigger, hyperenergized personality with a sensitive affectivity is familiar to all in hyperthyroidism. The changeableness of mood and depression during the puerperium at which time there is a temporary endocrine imbalance are part of the pattern of this physiological condition. The neuroses, vasovagus crises and not infrequently psychoses accompanying the menopause when the ovaries have terminated their physiological life cycle, are a few of the multitudinous symptoms of this period in woman's life and corroborate the James-Lange theory.

On the other hand, we know that the psychical element of the emotions have a profound influence in producing increased activity of the ductless glands. Emotional shocks in an individual of neuropathic strain may induce hyperthyroidism with all the symptoms of exophthalmic goitre. This results from overactivity of the adrenals with an increase of adrenalin in the blood, glycosuria, lymphocytosis and eosinophilia, rapid pulse, flushing or blanching of the skin and quick fatiguability. To compensate for this rapid loss of adrenalin the thyroid is stimulated to overactivity with, in severe cases, hyperplasia of the gland itself. Fear, or its counterpart, anxiety, may induce the above, and, if prolonged, may result in neurosis with the symptoms usual to hyperactivity of the thyroid gland. Sir James Purves-Stewart relates instances of the above in soldiers, who, during the war, were subjected to the usual horrors of trench warfare, and subsequently developed temporary exophthalmic goitre.

The genesis of the vertebrate species was supposedly an aquatic organism which in-

habited a medium similar to, if not the same, as sea water. In adapting itself to life on dry land, it had to acquire something which furnished its tissues with those elements contained in sea water. The human blood has been compared to sea water in the content of its elements, with the addition of red corpuscles to carry its oxygen and white corpuscles to serve as a medium of defense. The thyroid gland then developed from a rudimentary structure to take its place, physiologically, as we know it today as the gland of energy production and as the controller of growth of specialized tissues—particularly the brain and sex glands. It secretes a colloid containing iodine in normal amounts first discovered by Bauman in 1895. To Kendall we owe the isolation of this element in free form called thyroxin. Deficiency or excess of thyroid secretion results in two abnormal physiological states. To the deficiency state of subthyroidism Ord first gave the name myxoedema. To the excessive thyroid states are linked all degrees of hyperthyroidism, the most severe of which is exophthalmic goitre. Not only are the physical traits of these individuals classical and familiar to all, but they also exhibit typical states of affectivity. The hypothyroid moves and thinks slowly, if he is not a cretin, in which case he is liable not to think at all. He is apothetic and reacts slowly to emotional stimuli. He is not easily frightened, nor is he easily angered. As Berman so nicely explains it: "The brakes seem to be applied to his mental processes." In the hyperthyroid individuals, the picture is reversed. The individual is extremely energetic, overemphasizing the importance and undertaking of any task. He is alert and a prey to his environment. His emotional pattern is not fixed, for he is often as depressed as he is elated. Common to his emotional trend, however, is the promptness of his affectivity. The trigger seems well oiled and he explodes on the lightest pressure.

There may be individuals in whom hypothyroidism and hyperthyroidism seem to be mixed, or alternate. These people complain of the cyclic quality of their moods and purposes. One day they are in a heaven of exaltation and exhilaration, to descend



the next into the lowest depths of depression and despair. In extreme cases the state of exhilaration may go as far as mania, whereas, the stage of depression may go as far as melancholia. They frequently simulate maniac depressive or cyclic insanity.

As early as in 1852 the power of the emotions upon digestion was studied by Bidder and Schmidt. Their findings were later confirmed by Schiff and more recently Pawlow has studied the feelings or affective states favorable to digestive functions. By a process which he called "sham feeding," it was shown that the ingestion of food which a dog relished resulted in a flow of normal gastric juice, whereas, disagreeable odors or the offering of food not so desirable to the dog resulted in a complete cessation of this gastric flow. By the same processes the flow of saliva is stimulated or inhibited and since this secretion is so important to the sense of taste, upon which so much of the relish of food depends, its presence or absence plays a large part in the success or failure of later digestive processes. The emotions may further enhance digestion by certain fundamentals in the preparation of food which looks to making it pleasing to the eye and savory to the nostrils. Cognizance of this fact has given to the French their reputation in the culinary art. Emotions unfavorable to digestion are vexation, worry, unharmonious noises, anger, and fear. The dry mouth of the person called on to speak in public is a common instance. "The ordeal of rice" is still used in India to detect crime. Macbeth's advice that "good digestion wait on appetite and health on both" is good physiology. Not only are the secretory activities of the stomach and intestines, liver and pancreas influenced by strong emotions, but also the movements of the entire intestinal canal. During great excitement or emotional unrest these movements are entirely stopped. Many cases of gastric neurosis, or nervous indigestion, should be termed, according to Rosenbach, "emotional dyspepsia." The role of the autonomic nervous system should not be overlooked as a factor in the etiology of peptic ulcers. Cushing points out the frequent association of this condition in brain

tumors in or near the hypothalamic region. Some anatomists suggest this region as the probable brain centre for the emotions. Crile noted that in patients with transverse lesions high in the cord there was less worry, fear of the future and anxiety than in similar lesions of the cord below the upper levels of origin of the sympathetic system.

The pituitary gland has been referred to as the regulator of organic rhythms. Cradled in the sella turcica, this bilobed gland secretes two substances. The anterior or glandular lobe secretes tethelin, a semi-gelatinous material taken directly into the blood and governing skeletal growth, musculotendinous development and fat distribution. The posterior lobe, an outgrowth from the brain, secretes pituitrin which is passed directly into the subarachnoid space, becoming a content of the cerebrospinal fluid. It controls the tone of smooth muscle fibres of the blood vessels and the contractile organs of the body such as the intestines, bladder and uterus. Being a nerve stimulant, it enhances all the functions of the nervous system, particularly the sympathetic system and that portion subserving the mental faculties. It is said also to influence the salt content of the blood.

As the regulator of organic rhythm, the pituitary seems to influence such periodic phenomena as hibernation and the critical sex epochs. During hibernation the cells of the pituitary shrink and stain poorly. The somnolence and inactivity of the animal along with a preliminary excessive distribution of fat indicate the approaching wave of inactivity of the pituitary gland. Dyspituitarism may result from hyperactivity or inactivity of the whole gland. Certain types indicate overactivity of the anterior lobe at the expense of the posterior lobe. If this occurs before the long bones have become fixed, gigantism is the result. If after puberty, acromegaly is the result. In either of these the mentality is dulled in the majority. Mentation is slow and the individual is apothetic, unresponsive with the bovine temperament of passiveness and subject to somnolence during most of their wakeful hours. The mood of the acromegliac is dejection and depression, which is not en-

hanced any by the frequent bitemporal headaches of this disease. Something distinctive about the oversized pituitary types as to their mentality portrays them as pathologic giants. Rabelais' famous character Gargantua belongs to this group.

In the other type of hyperpituitarism, when the posterior lobe overacts at the expense of the anterior, quite as characteristic physical and mental traits are predominant. Small of stature, proportionately built in early adulthood, tending to girdle fat later on in years, these individuals are alert, active, capable and combative. Their affectivity like that in hyperthyroidism is of the quick-trigger type. They bear malice toward others for insignificant or imaginary wrongs. They are introspective, egotistic and present a Napoleonic appearance and temperament, which reminds one of the bantam rooster.

The suprarenal glands have been called the glands of combat and fight. This immediately brings to the foreground the relations of their secretions with two of the major emotions, fear and anger. Situated over the kidneys, these glands, like other glands of internal secretion, have two different areas of secretion—the cortex and the medulla. Since the secretion of the cortex of the suprarenals has to do with the development of the secondary sexual characteristics, qualities of the skin and its appendages, fat distribution and physical configuration, we will pass on to that portion of the gland whose function is more closely interlocked with the subject at hand. The secretion of the suprarenal medulla is adrenin, or so-called adrenalin. Cannon has experimented with cats to show the physiological effects of fright and anger upon the medullary portion of the suprarenals. His experiments demonstrate that fear, physical pain and excitement result in an overactivity of this portion of the gland with a surcharge of adrenin into the blood stream. This increases tone of smooth muscle tissue and a tensing of the nervous system. The liver is stimulated and pours sugar into the blood, thereby reducing the glucose tolerance with frequently glycosuria in the individual. There is a redistribution of the blood volume, and it seems to

be hurried to those organs of defense, the adrenal, skeletal muscles and brain. As a result, there is paleness or blanching of the skin surface with lowered surface temperature, acceleration of the pulse and elevation of blood pressure. In lower animals defense mechanisms are raising of the hair and stiffening of the erector spinal groups of muscles. If fear or mental pain is prolonged sufficiently, the suprarenals are completely drained of their adrenin and the previous heightened tone of the musculature begins to relax with fatigue and exhaustion as the result. This condition was noted and studied by Beard who first introduced the name neurasthenia for the condition in its chronic state.

We have previously stated that the relationship between the glands of internal secretion and the vegetative and cerebrospinal nervous system is reciprocal in function. Therefore, since fear and rage are definitely known to induce a surcharge of adrenin, we may expect these two major emotions to also result from hyperactivity of the suprarenal medulla. As Berman phrases it, "an adrenal personality is one dominated by the ups and downs of his adrenal gland." The curve of his life is the curve of secretion by this gland. Brain fog is closely associated with adrenal fog. So far as his emotions are concerned, the adrenal type is persistent, indefatigable, energetic, and optimistic. Depression is not in evidence. He is temperamental, but not necessarily sentimental. He is the variety that whistles and sings in the bathroom at 6 o'clock in the morning. He is subject to fright but not flight, for frequently the backer of fright is rage and the physiological initiator, adrenin, of both prepares his whole organism for those conditions necessary for defense.

The story is different in the hypoadrenal. He is the laggard. Unable to adjust himself to the demands of life, he dodges the undertakings required of him. He carries his responsibilities heavily, unless he shirks them altogether. He fatigues quickly and in the evening comes home all in, depressed, disgusted not only with life in general, but with himself, for he has the power to realize his inadequacy. He is a villain in the home,



and is feared by his wife and children. The evening meal is a torture for all rather than an event of pleasure. Depressed and morose, he lashes out at whatever comes near him, for his mood is anything but tolerant. These individuals frequently become the prey of alcoholics, as they strive for some stimulant to compensate for their deficiency of adrenin. And so a vicious circle is completed whose termination is chronic invalidism in a social misfit.

The vastness of this subject excludes all but a few of the details concerned. We have covered in a rather sketchy way the major

emotions and their relations to the major glands of internal secretion. If we have aroused any general interest in this subject, we feel that the time required in the preparation of this paper has been well spent. In closing, we wish to stress the urge of another consideration in history taking, physical examination and treatment. This consideration is the effect of the patient's emotions upon his well-being and also the effect of his environment upon his emotions. As is known to all, the splinting or sedasizing the emotions is frequently the turning point in some convalescences.

## ECZEMA\*

HOWARD KING, M.D., AND C. M. HAMILTON, M.D., Nashville

THE term eczema has always been used rather loosely. The laity employ it rather vaguely, usually meaning most any type of skin condition. Unfortunately, this same feeling of uncertainty is experienced somewhat by the medical profession. Many physicians classify all the skin diseases that they cannot diagnose as eczema. To some it means an allergic cutaneous manifestation. By strict interpretation, eczema in the adult is a papulo-vesicular eruption, or the products of vesiculation, occurring in a hypersensitive individual from contact with external irritants usually chemical in nature. Hypersensitiveness is not well understood. Carbolic acid will cause a dermatitis on any type of skin, and this kind of eruption is considered dermatitis venenata. Approximately 5 per cent of the population will develop an eruption from mild irritants that are harmless to the average individual. This group of individuals are considered hypersensitive. If certain areas of the skin of suitable individuals are subjected to repeated contact with mild irritants, no changes may take place for a long time. However, the skin resistance may reach a breaking point and result in an eruption. Subsequently, these areas of skin will not withstand future contacts with this same irritant so well as formerly. Therefore, the skin has been rendered hypersensitive. Shelmire rubbed alcoholic and ether extracts of poison ivy into the forearm of an immune person every fifth day for nine times, resulting in a vesicular eruption which soon disappeared. On the next exposure to poison ivy a severe disabling dermatitis occurred as the result of having been rendered hypersensitive by repeated exposure. By the same process, the painter may suddenly become sensitive to turpentine after being immune for years. The diagnosis of eczema from the use of hair dye frequently meets with disagreement by the patient who claims to have used

this same dye for many years with impunity. It is difficult to convince the users of hair dye that the skin has been made hypersensitive by continued exposure. Hypersensitiveness may be local, often confined to the face and neck in cases of hair dye dermatitis.

Allergy and hypersensitiveness are frequently confusing. Allergy is usually a local edematous reaction evoked by proteins or protein products, and is usually endogenous, originating in food. On the other hand, hypersensitiveness is exogenous in origin and chiefly due to chemicals. Infantile eczema is usually allergic, and cow's milk, egg, and wheat are the most frequent sources. Chronic, dry, thick, pigmented eczema of the face, neck, and flexures in adults who give a history of infantile eczema is usually allergic. This condition is classified as disseminated neurodermatitis by some and as chronic eczema by others. These patients frequently give cutaneous reactions to a long list of foods. Adults without a history of infantile eczema, hay fever or asthma, who develop an eczema of the exposed surfaces, such as the hands, the face, and the neck, can usually be classified as hypersensitive and the cause is likely to be external and due to a chemical irritation.

Underlying constitutional background and physical make-up may influence an eczema. Heredity may contribute to an eczematous tendency. The texture of the skin may be a premonitory factor. Thin, dry, translucent skin is easily irritated and does not resist bacterial invasion very well. Impaired nutrition may aid the production of eczema, such as results from varicose veins or anemia. An oily, greasy skin favors a seborrheic type of eczema, appearing on scalp, forehead, eyebrows, nasal alae, external auditory canals, postauricular areas, interscapular and sternal regions. Nervous and circulatory disturbances may be etiologic factors. High-strung, restless, temperamental, thin people are subject to eczema. They frequently have low blood pressure,

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low metabolic rate, vasomotor rhinitis and spastic colitis. They are often overworked and on the verge of exhaustion. Restless, overactive, alert, and mentally brilliant children are likely to be eczematous adults.

Discovering the cause of an eczema may tax the detective ability of the most scrutinizing observer. Painstaking, incessant, and repeated questioning of the patient may be necessary. The number of eczematogenous substances is unbelievable to the casual observer. It may be the fumes from the oil cookstove. Matches, turpentine, quinine from hair tonic, cosmetics, perfumes, lipstick, toothpaste, nail polish, brilliantine, waving material, eyebrow pencils, eyelash preparations, soap, furniture or silver polish, cleansing fluid, gasoline, oils, grease, eye drops, nasal sprays, and more than a hundred plants and trees may be the source of eczema.

The patient's occupation and the distribution of the eruption are important etiology factors. A high per cent of eczemas of the face and neck are due to hair dye, hair lotions, cosmetics, and dyes in furs or coat collars. The eyelids may be irritated by hair dye, cosmetics, and nail polish. Orris root is present in most cosmetics and is the chief irritant.

Periorbital involvement may be due to the use of eye drops containing butyn, atropine, or dionin. Intranasal sprays containing butyn frequently induce an eczema of the upper lip.

It is often difficult to substantiate the cause of the chronic dermatoses of the hands. They are chiefly eczema, ringworm, and staphylococcal infection. Eczema prevails on the backs of the hands. It is patchy, and may be papular, vesicular, and weeping, or it may be dry and fissured, and is aggravated by cold weather. Whereas, ringworm is usually vesicular, has a tendency to be circular, prevails on the palms, and is worse in warm weather. The staphylococcal infection is a pustular eruption and may be secondary to either of the other two dermatoses.

Eczema of the hands is frequently the result of contacts in occupation. Milker's eczema may result from cow's milk, cow's

hair, or the calf's saliva. Filling station employees react to gasoline, oils, battery chemicals, and rubber. Workers with glue and pastes are subject to irritation. Printers and photographers are often annoyed by this condition. Dentists and physicians using novocain with ungloved hands may suffer from eczema. Matches and other chemicals carried in pockets may be a cause. It is more likely to happen in warm weather when the clothing becomes saturated with perspiration.

Intradermal and scratch tests may be of assistance in determining the source of allergic eczemas. However, this method is not infallible. In infantile eczemas of babies who have never tasted egg, a reaction to egg will occur in 25 per cent of the cases. The patch test is more suitable for the true eczemas. This is accomplished by placing some of the suspected eczematogenous substance in contact with the skin. It is usually left on 24 hours. The skin should be examined at 24, 48, and 72-hour intervals. This test may also be faulty. Many chemicals may cause a reaction and the wrong one may be selected. On the other hand, exposure for months may be necessary to cause a reaction, especially if the patch should be placed on a nonsensitized area. Hair dye patch test on the back may not cause a reaction, when a similar test on the face or neck may react intensely.

The treatment of eczema is twofold. Ascertaining and removing the exciting cause and the application of local remedies are essential factors. Desensitization therapy has been unsuccessful. Local remedies should be protective in nature and mild, soothing preparations are the most suitable. Gloves may prevent eruptions. Housewives can use thin cotton gloves beneath rubber gloves in doing household duties. The cotton gloves absorb perspiration and prevent maceration.

Wet dressings give better results in weeping vesicular eruptions than salves or powders. Salves will not adhere to wet surfaces very well and often cause a filthy maceration of tissues. Powders cause the formation of crusts which harbor infection. The choice of wet dressing should be se-

lected to suit individual tastes. Saturated boric acid solution is very satisfactory. Weak solutions of aluminum acetate, potassium permanganate or magnesium sulphate give good results. Phenolized olive oil is beneficial in dry, scaly pruritic conditions. Boric acid ointment is helpful in hand eczemas. Anti-pruritic ointments and lotions should be used freely to prevent trauma from scratching. Cooling creams and moist dressings are soothing to erythematous eruptions. Alcoholic lotions may be irritating. In chronic eczemas, ointments or lotions containing salicylic acid, resorcin, or tar may prove beneficial. X-ray therapy in fractional doses is very helpful in relieving the pruritis and causing resolution. It is especially valuable in chronic lichenified lesions and seborrheic eczema in which there is an excessive amount of oil in the skin. X-rays cause the oil glands to atrophy and it should not be used in dry ichthyotic types of skin in which there is already a deficiency in oil.

Eczeema of the nipple is a very stubborn condition, but responds to X-ray therapy very satisfactorily. Very soft rays should be used in order not to damage the underlying glandular structure. A weeping condition should be treated with wet compresses. Careful observation should be made for beginning carcinoma of the nipple.

Nothing has proved of more value in this treatment than the use of elastic stockings in varicose eczema.

Diet does not play an important role either as an etiologic factor or as a therapeutic measure. Seborrheic eczemas and pustular conditions seem to do better on a diet limited in starches and sweets. A suitable diet can be established for the occasional allergic patient by the elimination method.

In conclusion, a few essential points should be reemphasized.

1. Adult eczema is usually the result of external chemical irritation.

2. Allergy does not occupy an important etiologic position, except in infantile eczema and the occasional chronic, dry adult type.

3. The treatment consists in elimination of the causes and the application of mild

and soothing ointments and lotions. X-ray therapy in fractional doses is helpful.

4. If the physician will convince himself that eczema is not due to "too much acid," but is generally caused by external chemical irritation, a more rational method of management will be formulated. The older and more experienced the dermatologist, the weaker are the concentrations of his prescriptions.

#### DISCUSSION

DR. J. MARSH FRERE (Chattanooga): Dr. Hamilton has given us a very concise and complete paper on a very broad subject which should be of interest to us all. Eczema, as he has pointed out, is one of the commonest of the skin diseases that we have to deal with. It attacks both young and old, from the head to foot. He has covered the etiology and diagnosis of eczema so thoroughly that I don't know that I could add anything, except to stress the fact that a good history will go further in helping us to make a correct diagnosis, also that elimination diets have been found of value in the diagnosis of chronic eczema, as he has mentioned.

I am not a dermatologist, but a roentgenologist, but I think that most of the dermatologists will agree with me that the roentgen ray is the most effective weapon we have in combating and eliminating this disease, especially in the chronic form.

Hahn first attempted to treat eczema by the use of the roentgen ray in 1898 when he reported two cases, one requiring twelve and the other four exposures, with complete cures.

Our last resort in stubborn cases of eczema is actinotherapy in the form of ultra-violet light and X-ray. Most of the cases that we get to see are of the chronic type that have had all forms of treatment except physiotherapy. We usually begin by treating them with the ultra-violet light, administering one treatment at 12- to 18-inch skin distance twice a week, gradually increasing the time. If after several treatments no improvement is noted, then we combine or alternate fractional doses of 1-6 or 1-4 skin units of X-ray. Most of our cases, of course, respond to this, and according to the latest literature, most men claim that they get about 80 per cent cures with very seldom any recurrences.

It may be of interest here to note that Lomholt has reported cases of chronic eczema which became intractable to X-rays and other methods of therapy, and responded only to ultra-violet treatment. Many men believe that radiation gives the best effect in subacute and chronic types of the disease, but Bormann believes that the roentgen therapy of acute eczema also has a sound theoretical basis, and reports 400 cases treated during a period of eighteen years; that is, of the acute type.

I want to mention just one thing about diet. Experience has shown that certain foods aggravate the disease and therefore should be excluded from



the diet. We should instruct our patients to avoid such foods as shellfish, fish, preserved meats, cheese, excessive portions of protein or carbohydrates, unripe fruits, strong coffee or tea, alcohol, spices, pickles and condiments, but to eat a simple diet consisting chiefly of green vegetables, with some kind of fruit at every meal.

DR. E. R. HALL (Memphis): Mr. President and gentlemen: For years eczema has been the junk heap on which all unclassified and undiagnosed dermatoses have been thrown. After all, names and classifications are not of primary importance. They do aid in the study of dermatoses and in imparting our knowledge to others. A common language is desirable, but unfortunately all of us do not understand and interpret this language in the same light.

Dr. Hamilton believes eczema is mostly of exogenous origin. It is my opinion that eczema is both exogenous and endogenous. There is an internal factor in all cases of eczema, call it sensitization, idiosyncrasy, allergy, atopy, or what have you, it is there. It may be inherited or acquired, transient or permanent. I don't understand eczema in the same light that he has presented it today. This is to be expected, and if this subject were presented before a meeting of dermatologists it would precipitate a great deal of argument. I am sure Dr. Hamilton is not surprised at my not agreeing with him in every particular. A question that has not been settled by dermatologists is the relation eczema has to other forms of dermatitis and just what disease should be called true eczema.

Some of the photographs shown today I would prefer to call a dermatitis, and since the term alone

has no special significance, we usually use a qualifying adjective like dermatitis venenata, dermatitis traumatica, etc. A dermatitis is produced by thermal, chemical, or mechanical agencies, and disappears upon withdrawal of the exciting cause. Occupational eczema may have the same exciting agents, but does not disappear on withdrawal of the exciting agent. There is an internal factor in the condition that produces sensitization. The chemical, mechanical and thermal agents serve only as the spark that sets off the explosion.

There are two things necessary in every case of eczema: First, the patient, the hypersusceptible person or the eczematic; second, the exciting agent or the eczematogen. Some cases react to the exciting agents in minute doses when used either externally or internally, and others only after repeated and prolonged usage and after they have passed the threshold of tolerance. When a skin is once sensitized many and diverse substances are capable of invoking an attack of eczema.

Relative to the skin test in cases of eczema I could repeat what the first essayist said relative to asthma and say the same thing about skin test in eczema, with less success in the eczematics. The patch or contact test is the one to be employed in most cases, and particularly when an external irritant is considered.

The treatment of eczema should be both general and local. I think we make a mistake to depend upon either to the exclusion of the other. X-ray and ultra-violet light are valuable agents, but should be used in connection with other agents and with a thorough knowledge of the underlying factors.

## NEEDLE (ASPIRATION) BIOPSY\*

ROBERT P. BALL, M.D.,\*\* Chattanooga

**B**IOPSY is a procedure of great diagnostic value to the practitioner of medicine. The frequency with which the practitioner will use this method will be in direct proportion to his knowledge of microscopic anatomy. It is not a human characteristic for a man to use a tool with which he is not familiar, and naturally a doctor will not utilize the biopsy unless he has been taught its use or thinks in terms of microscopic alteration in diseased tissue.

The dermatologist, probably, has more occasion and necessity to use the biopsy than any other medical specialist. The average dermatologist is not always a microscopic anatomist, which possibly explains, to a certain extent, the prolonged course of many skin lesions. The internist is usually a good microscopist, but his microscopical studies too often stop with the examination of the blood and urine. The surgical specialists utilize biopsy more than any group of medical practitioners. The routine examination of surgical material, rush diagnoses, frozen sections and biopsy are proof of its aid to good surgery.

The greatest information can be obtained from a section taken through the margin of a lesion which for comparison includes both the normal and pathological area. In some deep-seated lesions it is not always possible to obtain a section without extensive incision, and yet without a section a positive diagnosis cannot be made. In lesions of the bone and joints it is often impossible from roentgenogram to determine whether a rarefied area is inflammatory or neoplastic. Practically all areas of the body are accessible by a needle and without inconvenience or risk to the patient. The abdominal cavity is, of course, an exception. In malignant growth the cells are so loosely arranged and the stroma so friable there is easy separation of tumor fragments as com-

pared with normal tissue. Sufficient material can be aspirated from malignant tumors or inflammatory processes to be of considerable diagnostic aid. Various types of instruments have been devised for this purpose, some of which incorporate the use of coagulation current to seal and sterilize the tract of the needle. (1) (2). For those who do not have access to these instruments, a No. 18 or No. 16 needle, three inches in length, and a 50 cc. glass luer syringe will suffice. The technique which I have used successfully is as follows:

Skin is prepared with iodine and alcohol and is anesthetized with 1 per cent novocain. A needle is slipped into the tumor mass, joint or bone, and 50 cc. luer connected. The plunger of the syringe is then pulled out as far as possible and grasped with the palm of the hand to hold plunger and keep the vacuum. With the other hand rotate the barrel of the syringe on the plunger with a very slight withdrawal of the needle, about 3 or 4 mm., and push the needle back to its former position. The aspirated material is usually bloodstained. After about 2 to 5 cc. has been aspirated, the needle is removed, with continued traction upon the plunger of the syringe. As soon as the needle is removed from the skin there will be a release of vacuum by the air rushing through the needle which clears the needle of any fragments of tissue. The syringe is not to be emptied by closing the plunger. The plunger is removed and a gauze is used to wipe out the syringe. The contents are spread upon a gauze moistened with saline and all bits of tissue separated from clot and piled together upon a dry piece of paper and then dropped in fixing fluid. Sections are made in usual manner, preferably by paraffin embedding. If it is desirable or indicated, primary smears and cultures may be made from the material before spreading it upon gauze. The following case reports are used to illustrate the usefulness of this simple procedure.

Case I. E. R. L., a white male, age 58.

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\*\*From the department of pathology, Baroness Erlanger Hospital.



Admitted to Erlanger Hospital. Complained of pain in the lower thoracic spinal region, and indigestion. He had been bedfast for six months. No external evidence of spinal abnormalities was found. The gastrointestinal history was essentially loss of appetite and marked flatus. Roentgenograms of the spine revealed marked radiolucency and collapse of the body of the eleventh dorsal spine. The intervertebral spaces were normal. A needle biopsy of the body of the eleventh dorsal vertebra showed plasma cell myeloma. The patient did not show the presence of Bence-Jones protein in the urine. No other bone showed evidence of metastases. A necropsy was held upon the body of this man four months later. Except for extension of the tumor to adjacent structures, limited to an area 10 cm. in greatest diameter, there were no metastases found. Diagnosis: Plasma cell myeloma of twelfth dorsal vertebra, primary.

Case II. B. B., a white male, age 18. Admitted to Erlanger Hospital, January 7, 1934. Chief complaint was enlargement of the alveolar process of the left maxilla. He gave a history of being struck by a baseball bat six months before in this area, breaking the middle and lateral upper incisors on the left side. They were broken near the base of the crown of the teeth and the dentist saw fit to extract the nerves and fill the teeth. Three months later, there was pain and swelling in this region. A film showed marked alveolar absorption around the roots of the teeth that were filled. They were extracted and the sockets were curetted. No microscopical examination was made of the curettement. On admission there was slight bulging of the sockets, which were covered with mucous membrane. A fairly well localized tumor was palpable on the left side which was definitely in the alveolar process and measured about 3 cm. in diameter. Roentgenogram showed definite bone destruction of the alveolar process of the left upper maxilla over an area 2 cm. in diameter with extension to the sockets of the extracted teeth. Needle biopsy, No. 18 needle, showed osteofibrosarcoma of the giant cell type. Tumor was removed. Diagnosis: Osteofibrosarcoma, left superior maxilla.

Case III. M. H., a white female, age 64. Complained of sciatica. A physical examination revealed a small, firm tumor in the breast of eighteen months duration. Roentgenograms of the chest and pelvis revealed a mottled rarefaction of the body of the right ilium. The radiographic report was metastatic carcinoma of the right ilium. The films of the chest showed no evidence of metastases. A needle biopsy of the ilium showed metastatic adenocarcinoma. Diagnosis: Adenocarcinoma, right ilium, metastatic.

Case IV. L. F., a white female, age 17. Was admitted to Erlanger Hospital, August 25, 1933, complaining of pain over the sixth dorsal vertebra. She gave a history of striking her back in this area while getting into a truck six days ago. Temperature 100 F., pulse 120, respiration 22, and blood count 17,000. She stated that in May, 1933, she had numerous boils over the lower extremities. No boil was present on admission. Roentgenogram of the spine showed destruction of the body of the sixth dorsal vertebra. There was normal spacing of the intervertebral disks on each side. Needle biopsy of the body of the sixth dorsal vertebra was attempted and 30 cc. of thick yellowish white pus was aspirated. Culture showed staphylococcus aureus. Diagnosis: Staphylococcus osteomyelitis of the body of the seventh dorsal vertebra. This patient had complete anesthesia from xiphoid downward with loss of sphincter control and paralysis of the lower extremities on the day of aspiration. She was given no treatment other than nursing care. Reexamination in January showed a return of sphincter control with paresthesia of lower extremities. She could lift either leg well enough to perform the heel-knee test, and was free from pain.

Case V. J. M., a colored male, age 24. Admitted to Erlanger Hospital January 22, 1934, complaining of pain in lower back and thigh. He gave a history of an illness in September, 1933, which was diagnosed typhoid. He had been out of bed for about four weeks and about December 20, 1933, he was forced to remain in bed due to present illness, pain in lower back. Films of lumbar spine showed bone rarefaction of

lower border of third lumbar and upper border of fourth with bone proliferation or calcification. White blood count 6,700. Lymphocytes 45 per cent. Widal showed a titer of positive serum at 1-1600 dilution. A needle biopsy of this area showed only mononuclear leukocytes and tissue fragments. Diagnosis: Typhoid osteomyelitis of lumbar spine, fourth and fifth.

Case VI. J. G., a colored male, age 45. Admitted to Erlanger Hospital, March 21, 1933. His complaint was "misery" in upper left abdomen of six months' duration. Examination showed a large tumor mass of left upper quadrant which was not movable and not painful on manipulation. No blood in urine. Roentgenograms showed elevation of left diaphragm. Intravenous urography revealed dye elimination from both kidneys with distorted pelvis on left. The left kidney showed only one large calyx visible and on a level with fifth lumbar. Bladder contour was normal. A needle biopsy through the loin revealed a hypernephroma. This tumor was removed and found not to involve left kidney. Diagnosis: Hypernephroma, left.

Case VII. G. G., a white female, age 33. Developed a squamous cell carcinoma of the cervix two years previous to last admission to Erlanger Hospital on October 12, 1933. Patient received intensive radium treatment for the carcinoma of the cervix and showed no recurrence on last admission. The chief complaint was severe pain in right shoulder and back of the neck over the sixth cervical vertebra. Roentgenogram showed a destructive lesion of the body of the sixth cervical vertebra. A needle biopsy revealed squamous cell carcinoma. There was no evidence of metastases to the pelvic bones or chest.

Case VIII. R. M., a negress, 40, was admitted to Erlanger Hospital, September 30, 1933, with a fracture of left femur. She stated the fracture occurred when she attempted to turn over in bed. She has been suffering from rheumatism for three years. Films of left femur showed a rarefied shaft of femur with complete angular fracture of mid portion. Films of pelvis and skull showed marked rarefaction and mottling of bones. A needle biopsy of ilium showed no

malignancy. Blood serum showed a four plus Kahn, Kline and Butler. The fracture of the femur healed normally and other bones became denser under antiluetic treatment. Diagnosis: Generalized luetic osteitis.

The above cases show information which can be had by utilizing the needle biopsy. In these cases which have been presented there was very strong presumptive clinical and roentgenological evidence of the etiology of the lesion. However, in every one there was a difference of opinion before the needle biopsy. The needle is probably one of the oldest diagnostic procedures known to locate or confirm the diagnosis of a suppurative, inflammatory tumor. It has not been frequently used to diagnose a suspected neoplasm. When the needle has been used and no pus found, the aspirated material has been too often discarded without having taken advantage of sectioning the small bits of tissue obtained. The use of the above technique gives you material necessary for a positive diagnosis.

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#### DISCUSSION

DR. R. C. ROBERTSON (Chattanooga): It has been my good fortune to be rather closely associated with Dr. Ball in this work. My interest was first aroused in this method of diagnosis with the hope that it might be successfully employed in the diagnosis of early tuberculous joints, in which an accurate diagnosis is essential to proper treatment. I am sorry that Dr. Ball did not see fit to include at least one case of a proven tuberculous joint in which radiographic evidence was practically absent, and in which the provisional diagnosis was necessarily made by the physical findings.

It has long been my feeling that the major surgical procedure necessary to remove bits of tissue from suspect tuberculous joints, particularly the hip, is no minor procedure. If arthrotomy can be successfully replaced by needle biopsy, repeated if necessary, I feel that a valuable addition to our diagnostic armamentarium has been made.

To date, success has been as great as one could expect from a test which is of necessity rather blind. Even with open biopsy in tuberculous joints, 100 per cent success is not ours. The percentage of success in repeated needle biopsy on suspect tuberculous joints to date has been almost as great as when open surgical procedure was done. Guinea



pig inoculation, as well as microscopic examination, is always performed.

The needle is particularly valuable in diagnosing bone lesions in the inaccessible areas where open biopsy cannot be performed, such as the bodies of the vertebrae and in the closely adjoining soft tissues.

I feel that Dr. Ball's presentation speaks for itself, and that he is to be commended in bringing this procedure before us.

I have found it very valuable as a diagnostic procedure in bone and joint cases.

DR. LUCIUS E. BURCH (Nashville): I want to congratulate the doctor on his excellent paper. He has brought before us this morning a procedure that anyone can use if they will carry out the simple technic that he has illustrated, and by using this technic one can make a diagnosis in the early cases. It is a procedure that can be carried out by the general practitioner in the usual run of work.

I regret exceedingly that Dr. John Burch was unable to be present, as he was especially interested in the subject presented by the essayist. He has been using suction biopsy from the uterus for several years, and recently has made quite an improvement on his original instrument. Suction biopsy from the uterus is especially valuable in studying the menorrhagias and in making a differential diagnosis between those that are due to an endocrine disturbance and those that are due to a malignancy.

This procedure saves a patient hospitalization and curettement and the results are just as reliable, and in some cases we have found it even more reliable than curettement.

Recently we had one case that was curetted in another hospital, the biopsy was reported as non-malignant. The patient continued to bleed, and a suction biopsy was made from the uterus and a chorio-epithelioma was found.

I want to congratulate the doctor again on the easy, simple way that he has brought this subject before us, and especially on the simplicity of his technic.

DR. R. P. BALL (closing): I merely wish to thank the gentlemen for their generous discussion and to add what I did not have time to do a moment ago, the fact that so often in medicine we are very near making a diagnosis that will stand against criticism and we fail to do it, when, if we were to utilize this type of procedure, the needle biopsy, it might do it.

To illustrate, we had a case for post mortem recently, a negro boy twelve years of age, who had been bitten by a dog twelve weeks previously and was notified to observe the dog, and if he died he could return for antirabic treatment. The child was readmitted to the same hospital at which the staff had previously seen him, and they ruled out the possibility of hydrophobia because they were told the dog had not died.

This patient went through the usual symptoms of rabies. The post-mortem permit was limited to the abdomen. By needle biopsy through the foramen magnum, sufficient tissue was aspirated for us to inoculate guinea pigs and rabbits and definitely prove that this was a case of human rabies.

The family, when presented with this data, then admitted, and only then, that the dog had died and they had not returned the child for treatment.

## RETRODISPLACEMENTS OF THE UTERUS\*

WM. T. BLACK, M.D., F.A.C.S., Memphis

### HISTORICAL

**R**ETRODISPLACEMENTS of the uterus were first described by De Venter in 1716. Hunter, in 1774, described the condition existing during pregnancy. Isaak Senter was the first American to accurately describe the condition. Holyoke, in 1806, wrote of retrodisplacements, and Alquie, in 1840, in France, operated upon the round ligaments in animals and the cadaver, but was not permitted to operate in the hospitals upon humans. Simpson, in 1843, first used the uterine sound to determine the position of the uterus, which procedure has caused much subsequent harm by its indiscriminate use. Marion Sims, in 1859, used a silver wire, suturing the uterus to the abdominal wall.

Hodge, in 1860, felt the need of treating such misplacements, and invented the Hodge pessary. Later, Hewitt, Smith, Thomas, Menge, Gehsung, Zwanck, and others developed various contrivances for their correction. In 1881, Alexander, and two years later Adams, shortened the round ligaments through the inguinal canal for correcting the condition. Oldhausen and Kelly, in 1885, performed ventro-suspension of the uterus for the relief of retrodisplacements.

### ETIOLOGY

Retrodisplacements may be physiological, congenital, or acquired. It is estimated by various writers that at least one woman out of every four has a retrodisplacement. Stacy and Polak state that 20 per cent of nullipara have retrodisplacements, and Danforth, Abbott, and Lynch estimate that from 19 to 41 per cent, or an average of 30 per cent, have retrodisplacements following pregnancy. Before puberty and after the menopause retrodisplacements may be considered physiological. In the congenital, or endocrine type, the uterus remains in a retrocessed, anteverted and

anteflexed position. In such cases the uterus is hypoplastic and accompanied by other symptoms of hypoplasia described subsequently. Under the acquired types you have the primary displacement unaccompanied by any parauterine pathology.

Other acquired types are due to pathology usually independent of the uterus, viz., uterine and ovarian tumors, pelvic infections due to gonorrhea, post pregnancy infections, a ruptured suppurative appendicitis, tuberculosis, etc. Accidents, unless severe enough to crush the pelvic bones, are seldom, if ever, a cause of permanent retrodisplacements. Therefore, medico-legal cases of this sort are usually based upon unsound principles. However, accidents may cause complications in the presence of infections, tumors, etc., but usually not the real etiological factor. Spinal nerve lesions may be responsible for displacements, e. g., spina bifida, transverse myelitis, and tabes. In the asthenic type with poorly developed general musculature and in those suffering from malnutrition and compelled to assume work too early after labor, there may develop a retrodisplacement.

In injuries following childbirth where involution is delayed, the enlarged heavy uterus is improperly supported by its ligaments and drops backward. Overstretching, or lacerations of the pelvic structures, frequently occur, resulting in retrodisplacements and ptosis. A laceration of the perineum with a large rectocele is in some cases an etiological factor, but many lacerations, even of the second and third degrees, are not retrodisplaced for a long period of time, proving that the perineal body only acts as a support secondarily. A diversion of the physiological function of the pelvic diaphragm, which consists of the pelvic fascia, which extends laterally from the junction of the cervix and the body of the uterus, also the fascia extending from the uterus to the pubic arch anteriorly (pubouterine) and posteriorly (sacrouterine)

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ligaments), is often responsible for misplacements and prolapse.

Also injuries of the cardinal ligaments of Mackenrodt, the blood vessels, nerves and lymphatics contribute to the etiology. In congenital retrodisplacements there is found that some have the sacrovertebral angle pushed anteriorly and upwards, causing this prominence to be on a higher plane than the tubes. In such cases intraabdominal pressure is diverted from its normal plane. In other defective types the spine descends straight downward, allowing the viscerae to be abnormally located and intraabdominal pressure deflected from the normal plane. These defects have been described by Sturmdorf, Dickinson, and Truslow.

#### SYMPTOMS

All patients with a congenital retrocessed uterus have symptoms both local and general of a hypoendocrine condition. A deficiency of the anterior pituitary lobe hormone permits the uterus to remain firm (fibrous), small, anteverted, and anteфлекed. The patient is obese, has an abnormal distribution of hair, has a low metabolics change, which is due to a deficiency of the pituitary hormone acting on the thyroid. This type of patient lacks "pep," is frigid, has amenorrhea or oligomenorrhea, and is sterile.

The above symptoms are due to the pituitary in 80 per cent of cases. The ovaries are responsible in 20 per cent of cases in which dysmenorrhea and other hypoendocrine symptoms are present (Mazer). The tall, thin individual with broad hips, and a constricted chest and abdomen (asthentic type), with a poor musculature, has usually a dysfunction of the endocrine glands. This type has a general visceroptosis; therefore, symptoms of splanchnoptosis are complained of.

The symptoms of the acquired type due to infection and tumors are usually masked by the periuterine pathology present. In the acquired primary uncomplicated displacement the patient may be symptomless; however, this depends to a large extent upon the degree and length of time of the displacement. About 50 per cent, according to

Lynch, and 65 per cent, according to Graves, suffer from backache. Only 16 per cent complained of this symptom in the last fifty primary cases operated upon in the University of Tennessee clinic. Many complain of a heavy bearing down sensation (37 per cent in U. of T. clinic), and frequent urination, due to the cervix pushing against the bladder. Seventeen (17) per cent complained of menorrhagia and dysmenorrhea. When the ovary is prolapsed, it causes dyspareunia. Leukorrhea is usually present. Pelvic pain due to torsion of the pampiniform plexus of veins is a frequent symptom. In the chronic hyperplastic uterus of the third degree, retrodisplacement pressure upon the rectum may produce constipation and hemorrhoids.

The incidence of sterility is increased to 25 per cent. If pregnancy occurs and the uterus ascends into the abdominal cavity past the fourth month, the case progresses normally, but if the uterus becomes incarcerated below the brim of the pelvis, abortion occurs.

#### TREATMENT

In hypoendocrine cases (congenital), with a small fibrous retrocessed uterus, no operation is indicated. In this type a protein diet with the administration of Antuitrin S. or Follutein, with the addition of Theelin in large doses over a long period of time, will give, in some, an improved condition.

In the asthentic type with deficient musculature, diet, exercise and general hygienic treatment and hormones will be of benefit. X-ray treatment of 10 or 12 per cent of an erythemia dose, or three treatments of from 50 to 80 R. units repeated once a week for three weeks over the pituitary and the ovaries is beneficial to some. When the ovary alone is responsible, the treatment should be restricted to irradiation of the ovaries. The anterior pituitary lobe furnishes through the basophilic cells a hormone, or hormones, which regulates oestrin from the follicles and corpus luteum structures of the ovaries; also effects progestin from the corpora lutea cells. If the pituitary is manufacturing a sufficient amount

of pituitary hormones, then Theelin and irradiation of the ovaries is indicated.

In the acquired type following pregnancy, the knee-chest position, or the "turkey trot," should be employed. The pessary here serves a most useful purpose and if employed judiciously will prevent the necessity of an operation. The employment of a pessary for three or four months beginning a few weeks after pregnancy, has given excellent results in many cases of the writer.

In retrodisplacements during pregnancy the pessary will enable pregnancy to continue uninterrupted, if inserted six or eight weeks of the pregnancy and worn past the fourth month.

In those refusing operation or for constitutional reasons, in whom an operation is contraindicated, the pessary should be used. As a test to obtain information as to whether the patient's symptoms are relieved by restoring the uterus to a normal position before operating it is a most valuable agent. Those who labor under the misapprehension of the futility of the benefit of the pessary and say, "It should be discarded and thrown into the wastebasket," are unaware of the splendid results in properly selected cases. There are, of course, many contraindications to its use, viz., extensive lacerations, tumors, secondary misplacements with adhesions, an acute infection, prolapsed ovaries, etc.

#### OPERATIONS

If the patient presents symptoms which are relieved by a pessary, then the question arises which of the 145 or more operations devised for the correction of retrodisplacements should be employed. Some operators employ the same technic for every case, which is, I am sure, quite illogical. The type of operation should be based upon the pathology present for good results to be obtained.

There are three routes of operative procedure: (1) Through the inguinal canals; (2) through a medium abdominal incision; (3) through the vagina. Since the advent of asepsis, the danger of entering the abdominal cavity having been reduced to a minimum, the Alexander-Adams and other types of operations through the inguinal route have been practically abandoned.

Splendid work through the vaginal route by Vineburg, Bovee, Mack, Kelly, Duhrseen, Kustner, and many others has been performed, but only rarely in the performance of plastic work through the vagina are shortening of the sacrouterine and round ligaments and fascia advisable—as they can be dealt with more satisfactorily from within. In fat women that are poor surgical and anaesthetic risks, the vaginal route under sacral or infiltration anaesthesia may wisely be selected.

Many maneuvers for plicating or shortening the round ligaments intraabdominally have been designed. The round ligaments with the broad ligaments have been shortened either by suturing them to the anterior or posterior surface of the uterus-reefing or puckering the round ligaments (Long-Dudley), or shortening by bringing them out through the internal rings or fixing them to the abdominal wall in some manner. Uterine fixation and suspensions are seldom performed.

In uncomplicated displacements in the nulliparous or the multiparous woman without stretching or tearing of the pelvis fascia we rarely have symptoms from the retrodisplacements to justify any operation. In this type of retrodisplacement if it has been proven by the wearing of a pessary that the symptoms complained of have been relieved, then any standardized type of operation will usually suffice. However, the anterior (Coffee or Willis) to the posterior (Baldy-Webster) shortening is preferable. The reason for this preference is that complications with adhesions where the round ligaments pierce the broad ligaments have occurred, producing intestinal obstruction. Then the Baldy-Webster if improperly performed as demonstrated by the author in a paper reporting 100 Baldy-Webster operations in 1915 (Tenn. State Med. Asso.) makes the condition worse instead of improved. The writer does not advocate the anterior or the posterior shortening, if prolapse accompanies the displacement, for the reason that the Barrett-Crossen or Simpson-Montgomery modification of a Gilliam is more satisfactory. If the uterus is enlarged, heavy and flaccid, especially if



accompanied by uterine prolapse, and a retroversion with the cervix pointing upward, it is essential to also shorten the sacrouterine ligaments.

A Gilliam or Oldhausen will hold the uterus up, but due to obstruction, which has been observed twice (in Gilliam), the writer prefers not to utilize any operation where the ligaments are brought up through the pelvic or abdominal cavity. This is obviated and just as good results obtained by performing a Barrett, Crossen or Simpson-Montgomery type of operation. The Oldhausen or Gilliam makes pregnancy more hazardous than in operations where the ligaments are not attached to the anterior abdominal wall.

In women past the menopause with a large cystocele, with an uncomplicated retrodisplaced uterus and a moderate degree of prolapse—a Watkins-Wertheim operation may be performed advantageously. In retrodisplacements with procidentia, where removal of any of the female generative organs for religious reasons are forbidden, a ventrofixation, or suspension, is the operation of choice.

It is claimed by some that the Barrett operation pulls more laterally than anteriorly and for that reason will not hold the uterus up as well as the Oldhausen and Gilliam types of operations. In the Barrett, or a Crossen modification of a Gilliam you are following an anatomical and physiological route, that is, through, or near, the internal ring. Your ligaments are entirely covered by peritoneum, thereby not subjecting the patient to the danger of intestinal obstruction.

Any operation whereby the ligaments are not exposed to adhesive formation is a safer operation. If you have a large flabby uterus, and a third degree type with a slight prolapse, by first shortening your sacrouterine ligaments before performing the Barrett operation gives excellent results.

A perineorrhaphy should be performed in all of those who have lacerations with retrodisplacements. The fact that there has been considerably over a hundred operations devised for the correction of retrodis-

placements demonstrates that no one operation has been entirely satisfactory in all types of retrodisplacements; therefore, as before stated, the operation should be selected to best serve the pathology, the age and other factors in each case.

### SUMMARY

1. About one woman out of every four has a retrodisplacement. It is estimated that about one-third of these are congenital in type and need no operative treatment (medical treatment indicated).

2. Simple primary first and second degree retrodisplacements often produce no symptoms, and do not require operative intervention. However, the ovary becoming cystic when prolapsed must be thought of.

3. The acquired complicated types due to tumors or infections are only amenable to surgical treatment.

4. The pessary serves a most useful purpose during the early months of pregnancy in retrodisplacements, also in those displacements following pregnancy. It is a splendid agent to use as a test for the relief of symptoms in retrodisplacements before operating and in those that are refused, or refuse, operative measures.

5. The symptoms of simple acquired retrodisplacements depend upon the degree of displacement, the length of time misplaced, and whether or not there has been a stretching or tearing loose of the supportive structures of the uterus causing a prolapse.

6. The pathology of each case should be studied and the type of operation selected that is best suited for the case.

### DISCUSSION

DR. H. P. HEWITT (Chattanooga): What gynecology I know I was taught by Dr. Black. I personally agree with everything he has said about the use of the pessary. What do you think about using the pessary twelve days post partum where you have a retroposition that is acquired following labor? I feel that the prevention of retrodisplacements is more important than trying to cure them. A great many retrodisplacements following delivery are due to improper puerperal care. Each patient should be kept in bed until the uterus becomes a pelvic organ and is well involuted, regardless of whether it is ten days or twenty days post partum. Also patients should assume the knee-chest position daily for one month following deliv-

ery, which aids involution by giving postural drainage.

Many doctors say they keep their patients in bed ten days, when they let them get out of bed. A great many of the patients will have a uterus that is still an abdominal organ on the tenth day which is held anteriorly by the promonory of the sacrum and is a subinvolved uterus, which is a frequent cause of retroposition. I use pessary routinely following delivery where I have a retroposition of the uterus, but I wait until after the third week before I insert it. I would like for Dr. Black to express his opinion of the routine use of the pessary beginning at the twelfth day post partum.

DR. C. S. McMURRAY (Nashville): I enjoyed Dr. Black's paper mainly because we have passed through another cycle in retrodisplacements. Some fifteen to thirty years ago the trend was to operate on every case that came into the office that had a retrodisplacement.

I want to emphasize the statement which he reiterated, that one in four women will have displacement. Only a certain percentage of them are giving trouble.

I think that his paper and discussion are timely, to call our attention to the fact that we have swung the other way, and there has been probably a little bit too much conservatism.

It is true that in a great many cases if you will work out your differential diagnosis after you have found that the woman has a retrodisplacement, you can determine whether that woman is pathological or not; if she is symptomless, as Dr. Black has said, leave it alone unless it is an endocrine disturbance that might bring on future trouble.

Many of these cystic ovaries which he so nicely brought out come from hypopituitarism with its lack of stimulation of the thyroid, with lack of stimulation of the ovaries, and lack of development of the uterus. These cases are purely gynecologico-medical cases and not gynecologico-surgical cases. I do think we ought to emphasize the differential diagnosis in treating those cases, as the doctor has said.

DR. A. A. OLIVER (Paris): I enjoyed the doctor's paper very much. I just want to ask one question. In using pessaries, have you any special type of pessary that you advise? I will admit that

down in our county we are not using pessaries very much, but if there is any special type of pessary that you use on these cases, and if you will give us the length of time we would be glad to have this information.

DR. W. T. BLACK (closing): My answer to the first question is that is a little early for the use of the pessary. Usually a month or six weeks I should think would be a better time, because so many of these women have small lacerations, little tears of the perineum, etc., and the insertion of a pessary will be difficult and maybe impossible due to pain.

The type of pessary, of course, will depend upon the condition. The Smith-Thomas, probably, or if there is a large vagina, maybe the Hodge, but the ordinary Smith-Thomas pessary, in the size to fit the woman properly, is all right. It is remarkable how well even a small pessary sometimes will hold up a uterus when you think it is really too small to use. A pessary should be symptomless, of course. You can boil it and get it flexible and make it any shape you want to, according to the individual patient.

We have contraindications to the use of the pessary; bad lacerations, for instance. Any woman who has an acute pelvic inflammatory disease with adhesions should not have a pessary. If you have a prolapsed ovary, oftentimes the pessary will press upon it and produce pain.

The point I wish to express is that gynecology today, without a proper knowledge of endocrinology, cannot be practiced properly. Every physician should know something about endocrinology, because uterine bleeding, displacement, and many things we come across in gynecology have some relationship to the hormones.

Also, I want to condemn operating upon patients that don't need it. What would be the sense of fixing up a small retrocessed fibrous uterus that is congenital in type? Why operate upon women who are having no symptoms?

The test of symptoms by the use of the pessary, I think, is a necessary procedure before operating. In the clinic, and also in private work, we let them wear a pessary for a while to see if that is going to relieve them of their symptoms before advising an operation.



## PERORAL ENDOSCOPY AND GASTROSCOPY\*

F. L. ALLOWAY, M.D., Kingsport

**G**ASTROSCOPY a branch of peroral endoscopy is the subject I wish to discuss, but first I will review briefly the other branches of peroral endoscopy.

The term peroral endoscopy has come into general use as a convenient one to cover examinations of the interior of the larynx, trachea, bronchi, esophagus, and stomach.

The procedures of direct laryngoscopy, bronchoscopy, esophagoscopy, and gastroscopy are specular examinations requiring a special technic for their successful performance. These procedures in the hands of the expert surgeon have removed the esophagus and stomach from the realm of inference, so much so in fact that it is no longer considered justifiable to treat the stomach or esophagus without looking into them.

**Dangers and Complications:** When it is skilfully introduced, there is absolutely no danger whatever from the mere presence of a bronchoscope in the laryngotracheobronchial airway, nor of an esophagoscope in the esophagus and stomach. On the other hand, when an otherwise skilful, but endoscopically untaught, man starts to introduce either of these instruments into a dyspneic baby, the chances of the baby's survival are exceedingly remote. It is true that any physician or surgeon can be taught how to introduce these instruments safely; yet it is equally true that he cannot learn how to introduce them by looking on at a clinic. In principle, the bronchoscope, the esophagoscope, and the gastroscope are specula; but their introduction is highly technical as compared to the introduction of a vaginal or rectal speculum. If an esophagoscope is inserted into the pharynx and simply pushed downward, the one place it will not go is into the esophagus. Only a slight push is necessary to send it through the hypopharyngeal wall, after which it will meet with less resistance in its progress down into the mediastinum than it would

if it were going down inside the esophageal lumen.

**Preparation of the Patient:** Asepsis of the field is impossible; but a clean mouth should be insisted upon in adults and older children. Examination of the mouth for artificial dentures, bridge work, loose crowns, deciduous teeth, etc., is essential in order to forestall accidents in the use of the bite block and tube. Examination of the nose, the fauces, pharynx, and larynx is always essential. Mirror examination of the larynx for a local lesion or a recurrent paralysis should never be omitted. Rest and relaxation in bed is a desirable preliminary to the first endoscopy, but is dispensed with after the first, in ambulatory patients. A laxative is advisable, especially if a sedative is to be used.

**Contraindications to bronchoscopy, esophagoscopy, direct laryngoscopy, and gastroscopy:** The contraindications to peroral endoscopy for foreign body are few, and none would absolutely contraindicate endoscopic removal of a foreign body. High blood pressure, advanced cardiovascular disease, aneurysm, active syphilis or tuberculosis, and other organic diseases must be weighed against the urgency of the indications for the procedure, and call for preparatory treatment of the patient. Pneumonia is no contraindication, and in foreign-body cases the supposed pneumonia is usually an error in diagnosis.

In cases of embolic abscess a moribund condition of the patient may contraindicate bronchoscopy, not because bronchoscopy would hasten the end but because it would be powerless to prevent it. In babies and in very young children bronchoscopy should not be prolonged beyond twenty-five minutes, and repetition of the procedure is contraindicated without an interval of a few days, preferably a week.

**Introduction of the Gastroscope:** The first thing to realize is that if an esophagoscope or gastroscope is simply put into the pharynx and pushed upon, it will not go.

\*Read before the Tennessee State Medical Association, Chattanooga, April 10, 11, 12, 1934.

into the esophagus, but into the tissues of the mediastinum. Esophagoscopy is so totally unlike the introduction of a soft rubber stomach tube that the practitioner uninformed of the difference will almost certainly cause perforation with the esophagoscope. It is essential that close attention be given to the following details. The introduction of the esophagoscope calls for the exact position of the patient described. With the esophagoscope vertical, the standing operator finds the right pyriform sinus by sight, no mandrin being used. Passing downward, the operator finds the first obstacle at the bottom of the hypopharynx, in the rigid contraction of the cricopharyngeus muscle. It is necessary to wait for this to relax, but while waiting continuous gentle advancing pressure must be maintained and at the same time the esophagoscope must be pressed anteriorward by the left thumb, to lift it away from the posterior weak point, where it otherwise is almost certain to perforate. This must be done without lowering the head of the patient. The "handle" of the esophagoscope is not grasped in the hand. It must be up, by which we know that the lip of the tube mouth is anterior and away from the danger point. The general direction of the entire esophagoscope is maintained by aiming for the median line as indicated by the midline of the sternum, notwithstanding the fact that we are starting from one side, in the right pyriform sinus. Care must be taken not to point clear across toward the left side. The opening of the lumen is watched for in the anterior part of the field. The relaxation of the cricopharyngeal pinchcock is usually accompanied by a regurgitation of saliva, and the slanted end of the tube mouth glides over anterior to the relaxing cricopharyngeus muscle. The rush of saliva is quickly and automatically removed by the aspirating canal if the handle of the esophagoscope is up as it should be. Exploration of the thoracic esophagus is simply a matter of following the lumen as it opens up ahead. A procedure easy of accomplishment when the head is held in the air, free to be moved in every direction, as indicated above. The operator follows the lumen, the assistant

follows the operator with the patient's head. At the hiatus esophageus, the esophagus goes through the diaphragmatic pinchcock. Just as the rubber tube of a burette is pinched tightly shut by the spring clip known as a pinchcock, just so we have the esophagus pinched together at the hiatus by the crura and the muscular fibers of the diaphragm.

The point in the lumen of the esophagus corresponding to this pinchcock closure is found by lowering the patient's head to the right and aiming the esophagoscope (or gastroscope) for the anterior superior spine of the left ilium. Gentle but continuous pressure on the proper place will be rewarded after a few moments of patient waiting by the relaxation of the pinchcock. The opening of the hiatal constriction is usually accompanied by a rush of gastric fluid, which will be clear if the stomach is "empty" and normal; otherwise, it may be mixed with pus, blood, or food. Once the hiatus is passed, the esophagoscope slips so quickly and easily through the abdominal esophagus that the existence of an abdominal esophagus is not realized. There is no constriction of any kind, functional or structural, noticed at the cardia, only a faint difference in color and a marked difference in the form of the folds.

Gastroscopy: The peroral gastroscope, a straight and rigid instrument, can be passed into the stomach of any patient who can open his mouth, and this can be done without any anesthetic, general or local. It is an invaluable procedure for diagnosis and treatment of disease and for removal of foreign bodies. The insertion of the tube through the mouth into the stomach is the same procedure as esophagoscopy. Exploration of the explorable area of the stomach is carried out with the organ in the collapsed state, with the open-tube esophagoscope, by traversing it upward and downward, moving the tube laterally to a new location at the end of each traverse, as with the mechanical stage of the microscope.

If desired, a lens system may be inserted in the open tube, and the stomach inflated for inspection. The greatest obstacle to reaching the pylorus, especially in adults, is the forward bulging of the spinal column.



In children it is not very difficult to reach the pylorus; we have a number of times removed perorally foreign bodies jammed in it. In either adults or children, the pylorus can be manipulated by an assistant in such a way as to bring it over far enough to the left for the gastroscopist to inspect the pyloric antrum and the pylorus itself.

Peroral Gastroscopy for Disease: The usefulness of direct inspection of the stomach is obvious. The exploration of the left two-thirds of the stomach is a common procedure at the bronchoscopic clinics. The technic is the same as that of esophagoscopy, up to the point of reaching the stomach. After that the gastric folds are explored by vertical traverse in successive tracks, starting at the extreme left; each successive track is a centimeter toward the right of its predecessor until the entire field is covered. In some cases a window plug is placed in the proximal end of the gastroscope to retain air pumped in through the drainage canal for inflation. A lens system for angular vision of the inflated stomach may be used if desired, in which case it is introduced into the open tube after inflation. With an open tube carefully watched during introduction is the only safe method of traversing the esophagus. The gastroscope has opened up an enormous field for endoscopic study.

Medication is by topical application using the very long Jackson applicators that are made in such a manner that it is almost impossible for the specially made sponges to come loose. After the tube is in place, careful exploration of the stomach as already described is made. When an ulcerated area is found, the assistant manipulates the organ in such manner as to bring the diseased area near the lumen of the scope. The applicator containing 40 per cent silver nitrate is carefully applied. Then the applicator is withdrawn and another one saturated in monochlorophenol is rapidly applied. Ulcers near the pylorus have been successfully treated by Dr. C. Jackson with his gastrotomic gastroscope. With this instrument even the first portion of the duodenum is accessible.

As Dr. Keen expresses it, "These methods

devised by Dr. C. Jackson have revolutionized a whole department of surgery."

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#### DISCUSSION

DR. C. L. LASSITER (Chattanooga): Mr. President and Gentlemen of the Tennessee State Medical Association: I think Dr. Alloway has covered this subject very well in the time he had to read his paper, and he has done it in a very practical manner. It is a big subject and a growing subject, something that a great many of the nose and throat specialists do not care to follow, because it requires so much time and energy and equipment that the average nose and throat man doesn't care to give that much time and energy into the extra specialty. As for myself, I like to do my eye, ear, nose and throat work and the laryngoscopic work, but the deep treatment I am perfectly willing for the other fellow to have, because it takes a lot of extra equipment, time and energy, and extra people in the office to take care of the patients by appointment.

It is very important that every specialist in nose and throat work should do laryngoscopy, because of diphtheria, which is always an emergency, sometimes foreign bodies, malformations, strictures, new growths, papillomas, and all those things. I think the deep work like bronchoscopy, esophagoscopy, gastroscopy, should be limited to a few men who are willing to put the time and equipment into it. I don't care to do that myself.

Bronchoscopy in the hands of trained doctors is very good and easily done, and there is not much danger because the bronchial tubes and trachea are flexible after you get into the thorax, and they can get out of the way and protect themselves mighty well.

One thing that is especially well treated by bronchoscopy is massive or localized atelectasis, which you get so often. It is supposed to be due to parasympathetic reflex, and is easily broken up by just passing the bronchoscope and perhaps aspirating a little mucus.

In drainage of abscesses and bronchiectasis and things of that kind it is very important that you go in and get out the excess mucus and start the thing draining, and oftentimes it will go along very well. The cough and stress that the patient goes through with starts the abscess draining and you get wonderful results very often.

Esophagoscopy is used in foreign bodies, examining the esophagus for strictures, varicosities, and

all kinds of diseases, which are very important. It is a highly technical subject and should be left to the few people who are willing to put the time and energy into it.

Gastroscopy is very important, too. Jackson has recently called attention to the fact that the gastroscopist can help the surgeon in doing a bimanual examination during the operation; while the abdomen is open the surgeon can manipulate the stomach while the doctor examines with his gastroscope at the same time, locating ulcers, tumors, or whatever foreign bodies might be there, which is very important.

I have enjoyed the paper a great deal. It is a very important, growing subject, and everybody should know about it. The general physician should know how to make diagnoses in these cases and turn them over to the man who can handle them properly.

DR. FRANK L. ALLOWAY (closing): There are just one or two points I should like to bring out. The cost of the ordinary bronchoscopic outfit is \$1,200, just for an ordinary set. If you want to add the gastronomic gastroscope, it will cost you several hundred dollars more. I think \$2,000 would cover the cost of the instruments. If in any community you can get that back, you are fortunate, because it seems it is always the poor people who have these things down in their

stomachs and in their lungs. I have recently removed a safety pin, a tack, some pieces of toast, a straight pin, and a piece of screen wire. For this I received very little.

I think there should be in every community or in a district within a radius of about sixty or seventy miles a man who can do the ordinary things in bronchoscopy.

Gastroscopy is very easy to learn. If you do not want to get the other outfit, you could get a gastroscope and charge them \$25 and try and get it.

Another thing I should like to mention is cardiospasm. You can get excellent results by the dilatation of cardiospasm with Plummer's dilator (of the Mayo Clinic). Plummer developed a water dilator for cardiospasm. First, examination is made to see if it is cancer, because you do not want to kill a patient by dilating a cancer; but if it is nothing more than a cardiospasm, you pass the dilator down as you would a stomach tube, on the end of a string, first having made the patient swallow about ten yards of silk string in from twenty-four to thirty-six hours; then slide the metal end down the string to the constriction.

A colored fellow tried to swallow the string, but failed. He said: "Doctor, if you'd just put a piece of cheese on the end of that I could sure swallow it." And he did swallow it after the cheese was attached.



## VINCENT'S ANGINA\*

H. E. CHRISTENBERRY, M.D., Knoxville

IN presenting this paper the writer does not presume to know any more about the subject than you, but is presenting it because of the prevalence of the disease and due to the fact that all of us are being called upon so frequently to treat it. I hope that there will be some valuable information brought out in the discussion.

As we all know, the disease is caused by the bacillus fusiformis and spirochaeta of Vincent and can easily be diagnosed in the laboratory and usually by a close observer who is familiar with its clinical symptoms. It is advisable to check your diagnosis with the laboratory findings in order to confirm it. It should be differentiated from diphtheria, syphilis, malignancy, tuberculosis, scurvy, mouth manifestations of blood dyscrasias such as pernicious anemia, acute leukemia, mercurial and bismuth stomatitis.

Symptoms: There is usually inflammation somewhere along the gingival margins and the lesions spread with varying rapidity to other parts of the mouth and throat and may proceed to ulceration, gangrene, and necrosis. The surface of the affected area is usually covered with a grayish pseudomembrane or slough which, when removed, usually leaves the underlying surface quite red with a tendency to bleed, sometimes profusely. There is a peculiar characteristic odor to the breath.

More or less systemic disturbances are found in the more advanced cases. The resistance of the patient, hygienic conditions, and the virulence of the organisms, has much to do with the progress of the disease.

Dietary deficiencies and constitutional conditions, such as tuberculosis, anemia, lymphatic leukemia, and similar weakening diseases greatly reduce the resistance of the patient to Vincent's as well as many other infections.

In some cases the disease remains subacute for some time, producing only slight

discomfort to the patient and only noticeable when brushing the teeth, as the gums are gradually being destroyed. This is usually diagnosed as pyorrhoëa. This condition may flare up at any time with most aggravating symptoms.

As Vincent's infection is frequently associated with many other infections such as syphilis, diphtheria, scurvy, scarlet fever, leukemia, pellagra, pernicious anemia, and carcinoma of the mouth, it is best to carefully consider all clinical symptoms. When making a diagnosis in putrid otitis media, and putrid bronchitis, it is always advisable to suspect Vincent's, as it may be a primary source. In many infections of the mouth and throat it is not sufficient to trust the smear but make a culture to be more sure of the diagnosis.

Where Vincent's organisms are found in inflammatory conditions of the mouth and do not yield promptly to treatment, it is well to eliminate syphilis and diphtheria by necessary laboratory tests.

The greatest problem of Vincent's is the prevention of it spreading and its treatment. To prevent its spread the infected individual should be isolated with all necessary precaution as to the use of drinking cups, dishes, instruments, etc. As to treatment, there is no end. It seems that most everything has been used and much claimed for most everything used. I would not attempt to take your time to try to mention all the various remedies, which are mentioned in the literature. Most every physician has his specific and we shall be glad to hear of their merits in the discussion.

There are a few things that one has to bear in mind in approaching the treatment of Vincent's. The destruction of the organism, the comfort of the patient, prevention of further destruction of tissue, prevention of its spread, and restoration, as far as possible, of the affected tissue to normal condition. To accomplish these things it is necessary to have the cooperation of the patient in the practice of hygiene, eating

\*Read before the Tennessee Academy of Ophthalmology and Otolaryngology, Chattanooga, April 9, 1934.

proper food and a well-balanced diet, consisting of milk, eggs, chicken, fish, spinach, lettuce, cabbage, stewed fruits, and orange juice.

Keep bowels open, give tonics rich in vitamins and advise necessary rest. So much for the general treatment, now to the treatment of local symptoms.

As to local treatment with drugs, I have tried most of them, such as copper sulphate, iodine, silver nitrate, various anilin dyes, phenol and glycerine, sol. arsenical preparations, bismuth tartrate, chromic acid, potassium chlorate, etc., but discarded some for fear of injury to teeth, others because they were too eschoratic, and others because they were not satisfactory in my hands. In considering drugs or agents in the treatment of Vincent's we should bear in mind that we need a remedy that will penetrate the tissues. It should be antiseptically active, but should not be too caustic or destructive to the tissues, and should be as near a specific as possible.

From the vast number of drugs used in treatment it goes to show that so far there has been no specific found.

The following treatment has been found most satisfactory in the hands of the writer: First, cleanse the mouth, gums, tonsils, and all membranes of the membranous coating from the diseased area in early cases, or the caseous, necrotic debris in more advanced cases, then apply by means of cotton swab hydrogen peroxide to the affected surface and repeat until all affected surface is as free as possible from all debris, then dry and apply metaphen solution 1-500, or 10 per cent mercurochrome; wait a few moments and repeat the application, then expose the diseased surface to the rays of the quartz light by means of applicators (different applicators being necessary to reach different parts) for from 1 to 3 minutes, as the severity of the case indicates and the tolerance of the patient permits, you being the judge, of course, from your experience. For home treatment the patient may use metaphen solution, peroxide, sodium perborate, S. T. 37, or 1 to 4000 solution permanganate of potash, as most any of the above will give the patient something to do

and may aid recovery. At any rate, it will help to cleanse the mouth and throat. Some use and strongly advocate arsenicals, intravenously or intramuscularly, in the treatment of Vincent's, and in some cases there is no doubt but that they are a great help, especially in the suspicious or more complicated cases, but the writer has just as satisfactory and effective results by the use of protein therapy combined with local treatment with less discomfort to the patient.

The cooperation of the dentist will greatly aid us in the care of many of our cases.

Internal therapy is justified and indicated in many cases because the organisms find their way into the tissues where they cause much destruction.

Most of my cases, I am proud to say, have not been of the most severe and extensive type, but I have had some where at first the prognosis did not look favorable, but with the above treatment, as outlined, the results have been very satisfactory and effective. I could not and would not take your time to try to cover the history and all phases of Vincent's infection, but have offered this hoping to bring out a valuable discussion.

#### DISCUSSION

DR. G. W. BURCHFIELD (Maryville): The essayist has given us a clear, concise and practical description of a disease that has alarming proportions from a public health standpoint, and one that has caused a greater diversity of opinion among medical men in its management and treatment than any other subject I know of at present.

The relation of the predisposing causes of this disease could not be emphasized too much, especially avitaminosis in children and young adults; the wasting diseases and mouth hygiene in older people. The incidence of the disease and the severity of its course depend in a large measure on these causes.

The question of mouth hygiene was forcibly brought to us through our military experience where Vincent's infection acquired the name "trench mouth." In military units with a dental surgeon attached, the disease was found much less frequently. Some writers think it can truthfully be said that this disease is never seen in an otherwise clean and healthy mouth. Bloodgood states that there has been no case reported where all the teeth have been extracted, except as ulcerations occur from mal-fitted dentures.

The pathogenicity of the fusospirocheta infection has not been questioned, so far as I know, since its description by Plaut in 1894 and Vincent in 1896, until Lichtenberg and coworkers published



their experimental and clinical findings in the March 11, 1933, issue of the J. A. M. A. Their findings show these organisms found in practically every normal mouth and in so many other normal and pathological tissues all over the body that it seems at least probable that they are harmless saprophytes and opportunists growing on lesions caused by other agents and only rarely, if ever, becoming pathogenic. They found the fusospirocheta organisms increased markedly on mucous membrane of the mouth and pharynx in clean surgical wounds of tonsillectomized children. From the above observations they find cause to question the advisability of making the diagnostic smear for Vincent's organisms as a means of establishing a pathological relationship of these organisms to the suspected lesion. Some bacteriologists claim to have found transition forms of these organisms and in this way endeavor to explain the explosive types of infection we so often see in the floor of the mouth, neck, and larynx, following a chronic or subacute infection of the gums. They claim further investigation of the bacteriology of this disease may revolutionize our conception of its true nature and may help to lift us from our therapeutic dilemma.

Most of us think of this infection as being of an acute and chronic nature. To clarify this point, I would like to quote from the editor's note of our J. A. M. A., Feb. 24, 1934, issue: "Vincent's Infection is an acute condition and there is no such thing as a chronic Vincent's Infection."

I think the pulmonary type of this infection is too infrequently thought of and recognized. Pulmonary complications of the fusospirocheta infection are often confused with pulmonary tuberculosis. They may take the form of pulmonary gangrene, pulmonary abscess, ulceration of bronchi, lobar pneumonia, broncho-pneumonia, and empyema.

In treating this disease one should remember that these organisms in the symbiotic state are facultative anaerobes; that Vincent's does not bring about the usual body defense mechanism; there is no phagocytosis and no immunity to subsequent attacks; a section through an infected area shows tissue necrosis with no immediate inflammatory reaction. With this in mind one should abstain from any therapeutic agent with destructive power.

I resort to the oxidizing agents, sodium perborate and hydrogen peroxide, as suggested by Bloodgood. I have employed 15 per cent copper sulphate solution, bismuth paste, and bismuth violet, with good results. I employ small doses of neoarsphenamine (.2) in advanced conditions, and repeat daily. I have not used protein therapy except in cases mixed with diphtheria and streptococcic infections.

DR. HERSCHEL EZELL (Nashville): Vincent's angina is so very prevalent and destructive and its treatment so unsatisfactory that no apology need be made by the author for reading a paper on the subject. There is need of much improvement, especially in the treatment of this disease.

When one encounters an ulcerative condition of

the mouth and tonsils he should always think of Vincent's. "The lesion consists of a necrosis of the tissue which forms a pseudomembrane covering a sharply defined ulceration. The membrane is of a pultaceous granular consistency and when removed exposes a bleeding surface beneath. The bacillus fusiformis and its accompanying spirillum are always present in vast numbers both in the membrane and in the advancing line of necrosis. The ulceration is usually superficial, healing taking place without scarring. Sometimes it is deep and destructive and is followed by marked cicatrices. The tonsils are the usual site of the disease, but any part of the mucosa of the respiratory or upper alimentary tracts may be involved."—Barnes.

By far the greater number of my cases have been of the tonsils, and unfortunately I have seen a good many. I am never satisfied in making a diagnosis on the clinical symptoms alone and always have it confirmed by the microscope. It has been my observation that Vincent's ulceration of the tonsils is nearly always large and deep. Evidently the tonsil crypts are responsible for this by affording easy access to the deeper structures. Likewise I have noticed that Vincent's infection of the tonsils is most difficult to cure, since the infection of the crypts is hard to reach. For this reason I am of the opinion that all tonsils with this infection should be enucleated as soon as the ulceration and inflammation have subsided. I have seldom observed recurrence after tonsillectomy and have not had a fatal case.

Oral cleanliness is of paramount importance both in the prevention and treatment of the disease. Local treatment of the ulcers is of little or no value as long as carious teeth or suppurative conditions of the gums or tooth roots are ignored. It is therefore very necessary that the proper dental care be given. Attention should be given the diet and general health of the patient, as was advised by the essayist. For local application I prefer chromic acid (5 per cent), and for a mouth wash perborate of soda. It is well to remove the membrane with a cotton-tipped applicator dipped in peroxide of hydrogen and cocaine solution, 5 per cent, applied before applying the acid. I have not given salvarsan in any of my cases. I have used metaphen, but prefer chromic acid.

The treatment of severe cases is unsatisfactory and may require weeks or even months. Some cases seem to be more virulent than others and persist, although all dental work may have been attended to properly. I think that the removal of the tonsils offers the greatest assurance against recurrence of the disease.

DR. G. H. BERRYHILL (Jackson): Dr. Christenberry was kind enough to send me a copy of his paper, and he has covered the subject so well from every angle that he has left very little to be said in the way of discussion.

The question of differentiation from other confusable conditions, or the mixed infections with a Vincent, should be carefully guarded. The demon-

stration of the Vincent organisms should not lead one to overlook the possibility of other conditions. Any destructive lesion in the mouth, regardless of etiology, offers an excellent medium for the growth of the Vincent organisms. Since they are present in almost every mouth, in varying degrees, they stand ready to grow and become pathogenic when the proper medium is offered. As an illustration, I wish to mention a case. A few months ago a patient came to me with the clinical and objective signs of a Vincent's infection of the throat, of a very sensitive nature. Smears were sent to the laboratory for examination for both Vincent and TB. A positive Vincent's and negative TB were reported. Most of all of the known remedies were used at different times over a period of four or five weeks with the patient gradually growing worse. The same laboratory made several examinations with the same report as the first. Finally smears were sent to another laboratory and were reported to be teeming with TB organisms. In any other lesions of the throat where the Vincent organisms become a secondary affair, they should receive early and adequate treatment, since the elimination of this infection has a favorable influence on the primary condition.

Oftentimes a Vincent condition will give a referred pain which will cause a suspected acute condition in other parts. This is more true of the ear than any other region. I had a patient referred to me with a diagnosis of acute ear and acute mastoid. The diagnosis was made from the intense pain that was present. Upon examination of the ear and mastoid, no abnormality was found, but upon examination of the mouth a marked infection around the gums was present and the routine treatment for Vincent was applied. The patient quickly

responded to local treatment and in a few days all symptoms of the ear and mastoid were absent.

The literature is full of various remedies for its treatment, which goes to show there is no specific. The doctor has outlined a very safe and efficient treatment. However, all do not have access to a quartz light, so they must depend on other ways.

It is my opinion that arsenical therapy is the most effective treatment, especially for the more severe and the chronic types of infection. Mild Vincent infections are frequently self-limited, and many of the most severe cases respond to local treatment, especially if it is supplemented by a diet rich in calcium and vitamins as outlined by Dr. Christenberry. After cleansing the parts, some form of arsenic should be applied to the lesions. It has been customary for me to use Fowler's solution for this. I know that this is condemned by many, but my results have been very gratifying.

The most dangerous complication is the extension of the infection into the lungs. Intravenous arsenic therapy is indicated in those patients who do not respond to local treatment, and in those whose lungs have become involved. Small doses repeated every two to four days are less dangerous and just as effective as the larger doses. Intravenous arsenic medication is not harmless, and should not be used except when clearly indicated.

The importance of Vincent's infection is undoubted, and it is often overlooked by the physician and dentist. An early diagnosis is essential and intensive treatment necessary for a complete eradication. The patient should continue the home treatment as outlined by the writer for several months after the infection has apparently disappeared, as a prophylactic measure against recurrence.



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Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.  
 Dr. H. H. Shoulders, Nashville; Middle Tennessee.  
 Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.  
 Dr. M. M. Cullom, Nashville; Middle Tennessee.  
 Dr. E. C. Ellett, Memphis; West Tennessee.

## OFFICERS OF COUNTY MEDICAL SOCIETIES FOR THE YEAR 1934

County	President	Vice President	Secretary-Treasurer
Anderson	J. M. Cox, Coal Creek	Thomas Jennings, Clinton	J. S. Hall, Clinton
Bedford	S. S. Moody, Shelbyville	W. T. Sharp, Farmington	Alfred Farrar, Shelbyville
Blount	E. W. Griffin, Townsend	C. C. Vinsant, Maryville	H. A. Calloway, Maryville
Bradley	E. R. Ferguson, Cleveland	Vance H. Bell, Cleveland	D. N. Arnold, Cleveland
Campbell	R. J. Buckman, Westbourne	S. S. Brown, Jellico	F. A. McClintock, Newcomb
Carroll	O. W. Fesmire, McKenzie	E. W. Hillsman, Trezevant	J. H. Williams, McKenzie
Carter	C. B. Baughman, Elizabethton		E. T. Pearson, Elizabethton
Cocke			J. E. Hampton, Newport
Chester, Henderson, and Decatur			Wm. I. Howell, Lexington
Cumberland	E. W. Mitchell, Crossville		V. L. Lewis, Crossville
Davidson	John M. Lee, Nashville	W. G. Kennon, Nashville	N. S. Shofner, Nashville
Dyer, Lake, and Crockett	W. S. Alexander, Ridgely	B. G. Marr, Dyersburg (Dyer) R. E. Hellen, Ridgely, (Lake)	J. Paul Baird, Dyersburg
Fayette, Hardeman			B. F. McNulty, Bolivar
Fentress	I. R. Storie, Jamestown		J. P. Sloan, Jamestown
Gibson	Featherston Douglas, Dyer	Paul D. Jones	F. L. Roberts, Trenton
Giles	John Morris, Pulaski	Joe B. Wright, Lynnville	T. F. Booth, Pulaski
Greene	C. P. Fox, Greeneville	L. E. Dyer, Greeneville	M. A. Blanton, Mosheim
Grundy	D. H. Bryan, Monteagle	T. F. Taylor, Monteagle	U. B. Bowden, Pelham
Hamblen	D. R. Roach, Morristown		R. A. Purvis, Morristown
Hamilton	Franklin B. Bogart, Chattanooga	James L. Bibb, Chattanooga	Wm. J. Sheridan, Chattanooga
Hardin, Lawrence, Lewis, Perry, and Wayne	J. W. Danley, Lawrenceburg		C. C. Stockard, Lawrenceburg
Haywood	R. T. Keeton, Brownsville	Glenn T. Scott, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Eloy Scruggs, Paris	R. G. Fish, Paris
Hickman	L. F. Pritchard, Only	C. V. Stevenson, Centerville	W. K. Edwards, Centerville
Humphreys			W. W. Slayden, Waverly
Jackson	J. D. Quarles, Whitleyville	R. C. Gaw, Gainesboro	F. B. Clark, Gainesboro
Knox	E. A. Guynes, Knoxville	H. T. McClain, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	J. L. Dunavant, Ripley	T. E. Miller, Ripley	J. R. Lewis, Ripley
Lincoln	J. E. Sloan, Boons Hill		J. M. McWilliams, Fayetteville
Loudon			J. Gilbert Eblen, Lenoir City
Macon	D. D. Howser, Lafayette		J. Y. Freeman, Lafayette
Madison	Kelly Smythe, Bemis	Swann Burrus, Jackson	S. M. Herron, Jackson
Maury	Robert Pillow, Jr., Columbia	C. O. Fowler, Springhill	
		Watt Keiser, Columbia	C. D. Walton, Mt. Pleasant
McMinn	W. R. Arrants, Athens	D. P. Brendle, Englewood	R. W. Epperson, Athens
McNairy	John R. Smith, Selmer	G. B. Curry, Selmer	H. C. Sanders, Selmer
Monroe			W. J. Cameron, Sweetwater
Montgomery			Paul E. Wilson, Clarksville
Obion	W. B. Harrison, Union City	Har Glover, Union City	Frank Kimzey, Union City
Overton			A. B. Qualls, Livingston
Polk	H. P. Hyde, Copperhill	T. J. Hicks, Copperhill	F. O. Geisler, Isabella
Putnam	J. T. Moore, Algood	T. M. Crane, Monterey	Thurman Shipley, Cookeville
Roane	John Roberts, Kingston	F. A. Neergaard, Harriman	W. W. Hill, Harriman
Robertson	J. R. Connell, Adams		J. S. Hawkins, Springfield
Rutherford	W. T. Robison, Murfreesboro	J. D. Hall, Readyville	J. A. Scott, Murfreesboro
Scott			D. M. Woodward, Huntsville
Sevier	O. H. Yarberry, Sevierville	R. J. Ingle, Sevierville	C. P. Wilson, Sevierville
Shelby	W. L. Williamson, Memphis, J. B. Stanford, Memphis, President-Elect	W. L. Rucks, Memphis	J. J. Hobson, Memphis, Treasurer; A. F. Cooper, Memphis, Secretary
Smith	W. B. Dalton, Gordonsville	R. E. Key, Monoville	Thayer S. Wilson, Gordonsville
Sullivan and Johnson	W. K. Vance, Jr., Bristol	J. V. Hodge, Kingsport (Sullivan) J. C. Hutchinson, Crandall (Johnson)	Arthur Hooks, Bristol
Sumner	H. H. Bate, Castalian Springs	J. H. Stephens, Hendersonville	L. M. Woodson, Gallatin
Tipton	G. B. Gillespie, Covington		L. J. Lindsey, Covington
Warren	E. L. Mooneyham, Rock Island		John S. Harris, McMinnville
Washington	N. E. Hartsook, Johnson City	W. J. Mathews, Johnson City	C. H. Long, Johnson City
Weakley	T. W. Fields, Dresden	T. V. Hannings, Martin	E. J. Huey, Martin
White	R. E. Lee Smith, Doyle	E. B. Clark, Sparta	A. F. Richards, Sparta
Williamson	H. C. Stewart, Franklin	Dan German, Jr., Franklin	K. S. Howlett, Franklin
Wilson	S. B. McFarland, Lebanon	R. L. Witherington, Lebanon	J. R. Bone, Lebanon

# THE JOURNAL

OF THE

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H. H. SHOULDERS, M.D., Editor and Secretary

JUNE, 1934

## EDITORIAL

### THE NEW COUNCIL OF PUBLIC HEALTH

A new council of public health was appointed recently by Governor McAlister. The medical members of the council are as follows: Drs. John M. Lee, Nashville; E. M. Fuqua, Pulaski; C. P. Fox, Sr., Greeneville; W. K. Vance, Jr., Bristol; J. R. Thompson, Jr., Jackson; J. C. Ayers, Memphis. The dental member is Dr. O. A. Oliver, Nashville. The member which represents the Tennessee Federated Women's Clubs and Parent-Teacher Association is Mrs. Ferdinand Powell, of Johnson City. The pharmacist member is yet to be named.

The medical members of this council were selected from a list nominated to the Governor by the House of Delegates of the Tennessee State Medical Association. The other two members, we understand, were nominated by the respective groups they represent.

We are informed also that Governor McAlister has taken action to clothe this council with the powers necessary to formulate the policies of the Department of Health, just as they will exist when the bill endorsed by the State Medical Association shall have been passed by the Legislature. The Governor could do this by instructing the Commissioner of Health to make the policies of the department conform to those formulated by the council.

The new board met and organized on May 31st by the election of Dr. John M. Lee as president and Dr. O. A. Oliver as vice president. The actions taken by the board were of genuine importance. The actions were in effect to form themselves into a committee to study the department

and its policies with the view to forming sound policies at a later date. No action was taken concerning the policies or personnel of the department at the present time. These sensible actions serve to emphasize the fact that such changes as are made in the future, provided any are made, will be made after investigation and deliberation. It also should mean that their actions will be constructive and not destructive. It certainly would have been out of place for the council to have indorsed or condemned the policies or personnel without the proper sort of investigation.

A great deal of criticism has been directed at the medical profession in recent years with the idea in view of creating prejudice in the minds of lay people to the effect that the medical profession has sought the power and opportunity to destroy the Public Health Department of the state. The action of the council, composed largely of doctors, certainly refutes all such propaganda.

No one recognizes more definitely than doctors do that a well organized and properly conducted health department of the state is a necessity.

Doctors also recognize that the most potent influence for the protection of the public health today is the medical profession of the state.

Doctors and most sensible lay people recognize that the maximum of good will come from the proper coordination of the efforts of the two groups with each performing properly the functions which it should perform.

The present council of health has the responsibility of bringing about such a coordination of efforts. It is a big task. We have faith that the council will accomplish this desirable end if partisan politics are not allowed to exercise a blighting influence.

### THE CIRCULATING LIBRARY OF THE AMERICAN MEDICAL ASSOCIATION

The library service of the American Medical Association is deserving of special mention for the reason that the membership of the Association by and large, including



many well informed members, is unaware of the fact that such facilities exist.

The American Medical Association maintains a very large library and a large number of people are employed in reviewing the literature, sorting it and indexing it to make it available in the form of a small box or package library on any subject. Such a package is available as a loan to any member for a period of two weeks. It is obtained simply by writing the library department of the American Medical Association a request and paying the cost of transportation. These costs are small and a doctor who wishes to review any subject would save much time and money by using the box library because he is saved all the time and trouble involved in running down the literature on the subject through the various medical indices.

These services are just as available to the man who resides in a remote section as they are to the man who lives in a large city. They are just as close to him as his postal service.

### ECONOMICS

In the last few years, particularly since the depression, the subject of economics has occupied a very prominent place in our thoughts and in our literature, both lay and medical.

Many so-called experts, or specialists, in various phases of the subject, have projected themselves to the forefront, which position they have occupied for a brief moment and then disappeared.

The casualties among economists, or we might say the casualties of ideas of economists, have been very heavy, and the replacements numerous.

Enough has happened at least to convince any thinking person that the whole subject of economics as paraded before us is almost useless. So much of it is in the abstract. We all know that, in the abstract, one can figure the cost of chickens and eggs in terms of food cost per pound of weight produced, and make it appear that there would be an enormous profit in the growing of chickens, but these calculations in the abstract don't always pan out in practice.

This abstract economic question of grow-

ing chickens largely disregards the human qualities which must be brought to bear on the growing of chickens.

Economists, so-called experts, who can't possibly know anything about medical care, assume an ability to treat the subject of medical economics in a scientific way. The facts are they miss the mark much further than the one who attempts to compute the profits from the raising of chickens, for the simple reason that the human equation is more prominently involved in medical care than in any other service that is rendered to anybody anywhere. All its values can't be computed.

In the final analysis, there are not so very many things connected with life which actually go to make it desirable and livable which are susceptible of analysis by economists—even specialists. Certainly the VALUE of most of the things in life which make it desirable and livable cannot be calculated by economists.

Marriage and the establishment of independent homes is supposed to be the basis of our American civilization, but who could analyze the institution of marriage and the institution of homes from an economic viewpoint? Human emotions, human desires, human cravings, human weaknesses—these and many other human qualities enter the situation which brush aside all the little playhouses built by economists.

Certainly an economist might calculate the cost of the materials which go into the wedding gown. An economist might calculate with a fair degree of accuracy the cost of the materials which go into the building of a house, but these, when computed, in no way would represent the value of the home nor the value of the institution of matrimony.

Most of the problems involved in the rearing of a family are not susceptible of estimation or computation by economic equations.

The institution of religion, and the religious emotions which people entertain are well beside and beyond analysis by economists. They might be of some value in computing the cost of the bricks which go into a church building.

The value of most of the things which

make life cannot be computed on a basis of statistics.

The value of many of the material things can hardly be estimated by economists or statisticians for the reason that these are dominated very largely by human desires, emotions, and fears. Some one desires a certain work of art, and that piece has great value because of that desire. One person wants this type of home and another wants another type. For these reasons their value may be determined largely by a human equation. One person finds supreme happiness in one activity. Another finds happiness in another activity. One finds happiness in one mode of living. Another finds happiness in another mode of living, and the value of each mode is a value made by the desires of persons or by the happiness derived therefrom.

We know that many of the desires and emotions of people have no sound economic background, but they certainly go to make life human, desirable and livable.

There is no conflict of all these emotions when people enjoy complete liberty in the exercise of their emotions and desires. They seek and find happiness when they enjoy the liberty of seeking and finding happiness in their own way, and *that liberty of seeking and finding has a value which no economist can compute*. It has a value which, when destroyed, if ever destroyed, might destroy most of the qualities of living which make it in any way desirable.

The cost involved in maintaining a doctor's office may be computed. The cost involved in making a certain number of trips and a certain number of miles of travel and the cost of a certain amount of equipment may be computed. The cost of all these may be computed with a fair degree of accuracy by any ordinary person without the advice of an expert economist, but these in no way represent the value of a visit from a capable doctor to a sick patient of his whose full confidence he enjoys and whose full cooperation he will have when he attempts to effect a cure.

The more we think of the meddling and disputations of economists, the more we are driven to the conclusion that the whole subject had better be junked.

In so far as we are concerned, we are unwilling to see all the qualities of a life, which make it desirable and livable, squeezed out of it in order to make humans fit into a mold created for their habitation by economic experts.

## DEATHS

Dr. Noah Danley, St. Joseph. Vanderbilt Medical School, 1889. Aged 76. Died May 6th.

Dr. W. M. Bogart, Chattanooga. Bellevue Hospital Medical College, New York, 1889. Aged 66. Died May 29th.

Dr. A. E. Ray, Tullahoma. Vanderbilt Medical School, 1900. Aged 61. Died unexpectedly June 4th as the result of an attack of acute indigestion.

Dr. William Prentice Knox, Etowah. Vanderbilt Medical School. Aged 29. Died suddenly on May 6th.

## WOMAN'S AUXILIARY

President-----Mrs. Willis Campbell  
Memphis  
President-Elect-----Mrs. R. G. Reaves  
Knoxville  
Press and Publicity-----Mrs. W. W. Wilkerson, Jr.  
Nashville

### NATIONAL CONVENTION

Attention is called to the twelfth annual meeting of the Woman's Auxiliary to the American Medical Association, Cleveland, Ohio, June 11-15.

Quoting from her recent news letter concerning the meeting, Mrs. James Blake, president, says:

"Much as we regret that Cleveland and Ohio do not have an Auxiliary to help us in planning for the business program of our annual meeting, we are delighted to know that we are going to Cleveland and are to be welcomed by the Ohio State Medical Association and by the members of the Academy of Medicine of Cleveland.

Mrs. Clyde L. Cummer, wife of the presi-



dent of the Ohio State Medical Association, will act as chairman of the hostess committee to have charge of the entertainment of the Auxiliary women, and all other women guests attending the convention. The Carter Hotel will be the Auxiliary headquarters, and every effort is being made to make this our best annual meeting. Mrs. Cummer will make a delightful hostess, and I am sure every Auxiliary member attending the convention meeting will find food for thought in the program and will enjoy every moment of her recreation time under Mrs. Cummer's guidance."

We hope that Tennessee will be well represented at the Cleveland meeting.

## REPORTS OF LOCAL AUXILIARIES

### DAVIDSON COUNTY

Mrs. B. F. Byrd, President

The annual business meeting of the Woman's Auxiliary to the Nashville Academy of Medicine and Davidson County Medical Society was held on Friday, May 4th, at the Y. W. C. A. Mrs. B. F. Byrd was reelected president. Following the report of Mrs. Theodore Morford, chairman of the Nominating Committee, other officers reelected were:

Mrs. Oscar G. Nelson, vice president; Mrs. W. C. Bilbro, Jr., corresponding secretary; Mrs. D. W. Smith, recording secretary, and Mrs. William R. Cate, treasurer.

A feature of the meeting was the presentation by Mrs. W. O. Floyd, retiring state president, of a silver loving cup to the local organization for the greatest increase in membership in the state during the year.

Mrs. Paul Morrissey served as chairman of the Membership Committee. Annual reports of officers and chairmen of standing committees were given.

Mrs. Morrissey and Mrs. Carl McMurray, delegates to the meeting of the Woman's Auxiliary to the Tennessee Medical Association, held April 10-12 in Chattanooga, gave reports.

Mrs. T. G. Pollard, vice president of the State Auxiliary, announced a luncheon being planned for the ladies attending the meeting of the Middle Tennessee Medical Society, to be held in Springfield, May 10th.

## PERSONAL ITEMS

Mrs. James Blake of Hopkins, Minn., president of the Woman's Auxiliary to the American Medical Association, was the recent guest of Mrs. Rogers N. Herbert at her home on Stratton Avenue.

She was the honor guest at a tea, which Mrs. Herbert gave at the Centennial Club. Mrs. Herbert is National Chairman of "Hygeia," the health magazine published by the American Medical Association.

Dr. W. S. Farmer has announced the engagement of his daughter, Estelle, to Mr. Frank Wooten, Jr., of Raleigh, N. C. The wedding will take place in Nashville at Wightman Chapel, Scarritt College, on June 18th.

Miss Farmer is a member of the Davidson County Auxiliary and we regret that her marriage will take her away from Nashville to live. Two other members of the Auxiliary, Mrs. Horace Gayden and Mrs. Hollis Johnson, will be among the bridesmaids in her wedding.

Mrs. W. W. Wilkerson, Jr., and children, Bill, Nancy Fawn, and Jane, left Thursday evening for a visit to Mrs. Wilkerson's parents, Dr. and Mrs. William Harrison Parent, of Lima, Ohio. Mrs. Wilkerson will also attend her class reunion at Western College, Oxford, Ohio, during her two weeks' stay.

## NEWS NOTES AND COMMENTS

### BOOKS STOLEN

Dr. H. B. Woodard, of Springhill, reports the loss of a number of books. Several of these books have been missed after visits from men posing as detail men who visited the office when the doctor was out. Other doctors in neighboring towns have had similar experiences, so we are publishing this warning. We would also suggest that most of us are not careful enough to lock up our private offices when we leave.

The thirteenth annual scientific and clinical session of the American Congress

of Physical Therapy will be held in Philadelphia at the Bellevue Stratford, September 10, 11, 12, 13, 1934. Those interested may send for preliminary program. Address, American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

The Seventh Annual Graduate Fortnight of the New York Academy of Medicine will be devoted to a consideration of Gastrointestinal Diseases. The Fortnight will be held October 22 to November 2.

The profession generally is invited to attend.

A complete program and registration blank may be secured by addressing Dr. Frederick P. Reynolds, New York Academy of Medicine, 2 East 103rd Street, New York City.

The annual Alpha Omega Alpha lecture was delivered in the amphitheatre of the Vanderbilt School of Medicine on Monday, April 30, by Dr. Samuel C. Harvey, professor of surgery at Yale University School of Medicine. Dr. Harvey's subject was "Tumors of the Nervous System Derived from the Neural Crest."

### CHANGE OF ADDRESS

Please, doctor, notify us when your postal address is changed. By so doing you will receive your JOURNAL and other mail from this office earlier; also, there will be less chance of loss of your mail, and less handling by the post office.

We have received notice from the post office of the following changes of address:

Dr. Jesse C. Hill, 4323 Lyons View Pike, to 409 Medical Building, Knoxville.

Dr. R. F. McCreary, Market Street, to 649 New Sprankle Bldg., Knoxville.

Dr. Olin W. Rogers, West Church Avenue, to Box 1084, Knoxville.

Dr. J. C. Blankenship, Halls, to Sparta, Tenn.

Dr. Milton C. Wiggins, 1930 East Fourth Street, Tucson, Arizona, to Paris, Tenn.

Drs. Henderson & Hall, Memphis, from the tenth floor of the Exchange Building, to fourteenth floor.

Dr. J. F. Bradley, 1460 Madison Avenue, to 154 No. Cooper, Memphis.

Dr. Eben Alexander, Hamilton Bank Building, to Box 563, Knoxville.

Dr. Horace Brown, Union Avenue, to 654 New Sprankle Building, Knoxville.

Dr. S. H. Hodge, West Church Avenue, to Box 567, Knoxville.

Dr. A. G. Kern, Walnut Street, to Box 405, Knoxville.

Dr. Robert S. Leach, West Cumberland, to Box 222, Knoxville.

Dr. Robert G. Reaves, West Cumberland, to Box 222, Knoxville.

Dr. R. P. Oppenheimer, West Church Avenue, to Box 462, Knoxville.

Dr. R. F. McCreary, Market Street, to 649 New Sprankle Building, Knoxville.

Dr. R. W. Depue, Medical Building, to Box 1287, Knoxville.

Dr. E. R. Zemp, Walnut Street, to Box 825, Knoxville.

Dr. C. B. Jones, West Church Avenue, to Box 663, Knoxville.

Dr. Tom R. Barry, Medical Building, to Box 783, Knoxville.

## MEDICAL SOCIETIES

### *Blount County:*

This society meets every week, always has a good paper, and those who attend are well repaid.

June 21: Paper by Dr. R. C. Waterhouse, of Knoxville.

June 28: "Syphilitic Myocarditis," by Dr. J. A. McCulloch. Discussion led by Dr. F. A. Zoller.

### *Davidson County:*

Three papers in May concluded the spring session of the Academy. No scientific meetings will be held in June, July, and August.

May 15: "Intestinal Obstruction," by Dr. R. A. Barr. Discussion opened by Dr. W. M. McCabe.

May 22: "The Functions of the Pituitary Lobes, with Slide Demonstrations of the Various Clinical Types of Altered Pituitary Function," by Dr. Albert Weinstein. Discussion opened by Dr. J. P. Keller.



May 29: "Indications for Operation in Cases of Cholecystitis," by Dr. H. H. Shoulders. Discussion opened by Dr. W. C. Dixon.

#### *Giles County:*

Dr. John Burch, of Nashville, was principal speaker at a meeting of the Giles County Medical Society, of which Dr. John Morris, of Pulaski, is president.

Following the program a business meeting was held to discuss pending legislative bills.

#### *Hamilton County:*

The only meeting in July will be held on the fifth. Dr. J. L. Bibb will speak on the "Goiter Heart," and Dr. Fred B. Stapp on "Memories of the Past."

#### *Hardin, Lawrence, Lewis, Perry, and*

#### *Wayne Counties:*

On May 25th, a very interesting meeting was held in Linden. The papers were well received and liberal discussion given by a large attendance.

The program was as follows:

"Postpartum Hemorrhage," by Dr. C. C. Stockard, Lawrenceburg. Discussion opened by Dr. F. H. Norman, Waynesboro.

"Eye Conditions from Standpoint of the General Practitioner," by Dr. Robert Sullivan, Nashville. Discussion led by Dr. W. E. Turner, Lobelville.

"Consideration of the State Medical Society's Bill to Reorganize the State Department of Health," by Dr. John M. Lee, Nashville.

#### *Knox County:*

May 8: Dr. J. B. Neil, "Treatment of the Prostate Gland, with Report of Cases." Discussion opened by Dr. Tom Barry.

May 15: Dr. R. B. Wood, "Coronary Diseases." Discussion opened by Dr. Watson.

May 22: Dr. E. R. Zemp, "The Prognosis and Treatment of Nephritis." Dr. A. L. Rule opened the discussion.

May 29: Discussion of plans regarding the legislative program.

#### *Washington County:*

On July 5th, papers are scheduled by Dr.

C. W. Friberg, on an obstetrical subject, and Dr. Lee K. Gibson on "The Management of the Hyperthyroid." Dr. Moss will discuss the first paper and Dr. Cass the second.

#### *Wilson County:*

The next meeting will be held on July 5th. Dr. R. B. Gaston will discuss "The Treatment of Burns."

## OTHER MEDICAL SOCIETIES

### VANDERBILT UNIVERSITY MEDICAL SOCIETY

May 11

#### 1. Case Report:

"A Case of Obstruction of the First Portion of the Left Subclavian Artery of Undetermined Etiology," Dr. Ralph M. Larsen.

A 71-year-old white female developed rapid onset of gangrene of second and fifth fingers within three days after symptoms of arterial obstruction, progressing within three weeks to the third and fourth fingers distally. There was moderate generalized arteriosclerosis; no evidence of endocardial thrombosis. April 19, 1934, the first portion of the left subclavian artery was explored, first portion of artery and periarterial tissues found densely scarred and lumen obstructed. Arteriotomy of third portion was performed and a curved probe passed into lumen, followed by increased flow of blood. The subclavian vein was ligated. This procedure was followed by definite improvement in the distribution of the circulation.

Case discussed by Drs. George Johnson and John B. Youmans.

2. "The Effect of Prolonged Cultivation and of Bacterial Filtrates on the Pathogenicity of *Endamoeba Histolytica* for Kittens," Drs. Henry E. Meleney and William W. Frye.

Two strains of *endamoeba histolytica* from the hill country of Middle Tennessee and two strains from the bottom land of West Tennessee have been in continuous cultivation for two and a half years through over three hundred subcultures. The inoculation of kittens with these amoebae at intervals during this period has demonstrated

that each strain has maintained about the same degree of pathogenicity which it first exhibited and that the strains from the bottom land are more pathogenic than the strains from the hill country. Observations on the effect of varying the medium in which the washed amoebae were suspended for injection into kittens have shown that fresh horse serum diluted with Ringer's solution restrains the invasive activity of the amoebae. Filtrates of the supernatant fluid from amoeba cultures, when heated, especially to 70° C. or above, seem to encourage the invasive activity of the amoebae.

Paper discussed by Drs. Avery, Goodpasture, and Leathers.

3. "The Effect of Vitamin A Deficiency on the Female Reproductive System," Dr. Karl E. Mason.

Studies based on over 500 female rats, 250 pregnancies, and over 50,000 vaginal smears demonstrate that the chief manifestations of vitamin A deficiency on the female reproductive system are: (1) continuous vaginal cornification, which has proved a much more sensitive and reliable criterion of A deficiency than has xerophthalmia or growth retardation; (2) early infection and death of a variable number of implantation sites; (3) unusual prolongation of the gestation period (apparently due to prolonged function of corpora lutea), with a high percentage of young delivered dead or complete impairment of the birth mechanism; (4) unusually high weaning mortality of young delivered alive, due to disturbed mammary function.

Paper discussed by Dr. Cunningham.

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#### UPPER CUMBERLAND MEDICAL SOCIETY

The annual meeting of the Upper Cumberland Medical Society was held at Red Boiling Springs on June 6-7. An excellent program was presented to a large crowd. Liberal discussion was given each paper.

The program was composed of the following papers:

"The Toxemias of Pregnancy," by Dr. R. C. Gaw, Gainesboro. Discussed by Drs. T. M. Crain, Monterey, and A. F. Richards, Sparta.

"Factors of Safety in Thyroid Surgery," by Dr. N. S. Shofner, Nashville. Discussed by Drs. R. B. Gaston, Lebanon, and W. D. Haggard, Nashville.

"A Report of an Interesting Outbreak of Food Poisoning which Occurred a Few Months Ago at Pleasant Hill Academy, Due to a Staphylococcus which Originated from the Udders of Cows," by Dr. Jas. A. Crabtree, Nashville. Discussed by Drs. W. M. Litterer, Nashville, and V. L. Upchurch, Sparta.

"The Cure of Inguinal Hernia" (illustrated by motion picture), Dr. C. R. Crutchfield, Nashville. Discussed by Drs. Sumpter Anderson, Nashville, and Eagle Bushon, Tompkinsville, Ky.

"Some of the Ways Our Public Health Program Might Be Improved, as Seen by a General Practitioner," Dr. J. P. Sloan, Jamestown. Discussed by Drs. B. S. Rhea, Lebanon, and W. M. Breeding, Livingston.

"A Treatment for the Fractured Femoral Shaft," Dr. J. F. Gallagher, Nashville. Discussed by Dr. Duncan Eve, Nashville, and Dr. W. M. Johnson, Sparta.

"Postgraduate Instruction," Dr. W. H. Witt, Nashville. Discussed by Drs. A. E. Keller, Nashville, and Jess T. Smith, Gamaliel, Ky.

"Further Observation on the Use of High Frequency Currents for the Relief of Prostate Obstruction," Dr. J. B. Neil, Knoxville. Discussed by Dr. Perry Bromberg, Nashville, and Dr. Horace Gayden, Nashville.

"Pregnancy with Heart Disease," Dr. Jas. L. Ames, Lebanon. Discussed by Dr. John Cayce, Nashville, and Dr. Thayer S. Wilson, Gordonsville.

"Fracture of the Skull. Report of 120 Cases," G. Y. Graves, F.R.C.S., Bowling Green, Ky. Discussed by Dr. W. A. Howard, Cookeville, and Dr. C. D. Robbins, Galatin.

"Diphtheria," Dr. Alex B. Shipley, Cookeville. Discussed by Drs. Joe T. Smith, Knoxville, and F. B. Clark, Gainesboro.

"The Evolution of Prostatic Resection," Dr. Geo. R. Livermore, Memphis. Discussed by Dr. J. C. Pennington, Nashville, and Dr. John Burch, Nashville.

"Injuries Involving the Knee Joint," Dr.



J. J. Ashby, Nashville. Discussed by Dr. R. W. Billington, Nashville, and Dr. V. L. Lewis, Crossville.

"The Management of Diabetes Mellitus," Dr. C. C. Turner, Glasgow, Ky. Discussed by Dr. R. C. Derivaux, Nashville, and Dr. R. B. Wood, Knoxville.

"Tonsil Infections" (illustrated with slides, Dr. Weldon, Glasgow, Ky. Discussed by Dr. Claud Tubb, Sparta, and Dr. Herschell Ezell, Nashville.

"The Incidence of Ectopic Pregnancy in Gynecological Conditions," Dr. D. C. Seward, Nashville. Discussed by Dr. E. W. Clark, Willow Grove, and Dr. Thurman Shipley, Cookeville.

"Consideration of State Medical Society's Bill to Reorganize the State Department of Health," Dr. Perry Bromberg, Nashville. Discussion, general.

"The Treatment of Peptic Ulcer," Dr. G. A. Hendon, Louisville, Ky. Discussed by Dr. W. O. Floyd, Nashville, and Dr. T. H. Phillips, Rockwood.

"New and Interesting Experiences in the Treatment of Diseases of the Terminal Bowel" (with lantern slides), Dr. Granville S. Hanes, Louisville, Ky. Discussed by Dr. D. R. Pickens, Nashville, and Dr. H. G. Rudner, Memphis.

"Urine Test for Pregnancy," Dr. Herman Spitz, Nashville. Discussion by Dr. Wm. T. DeSautelle, Knoxville, and Dr. Frank Harris, Chattanooga.

"Cause of Death from Emboli," Dr. C. C. Howard, Glasgow, Ky. Discussed by Dr. Jack Witherspoon, Nashville, and Dr. E. L. Mooneyham, Rock Island.

"Third Stage of Labor," Dr. Wm. T. McConnell, Louisville, Ky. Discussed by Dr. J. T. Moore, Algood, and Dr. R. E. Key, Carthage.

"Tumors of the Breast," Dr. E. G. Wood, Knoxville. Discussed by Dr. T. G. Pollard, Nashville, and Dr. L. E. Burch, Nashville.

"Biliary Surgery in Jaundice" (patient with case reports; lantern slides), Dr. W. O. Floyd, Nashville; Dr. H. L. Fancher, Chattanooga, and Dr. W. C. Dixon, Nashville.

At the night session there was a banquet at the Palace Hotel. The address of welcome was delivered by Prof. H. T. Wright. Response by Dr. W. S. Farmer, Nashville. The subject of Dr. W. M. Brown's presidential address was "Refraction."

#### MIDDLE TENNESSEE MEDICAL ASSOCIATION

A most successful meeting was held in Springfield, May 17-18. The program, as published in our last issue, was presented, and every paper discussed. The Robertson County Medical Society as host did everything necessary for the comfort and pleasure of the visiting doctors.

Lawrenceburg was selected as the place for the fall meeting.

Officers were elected as follows: President, Dr. Theodore Morford, Nashville; vice president, Dr. J. R. Connell, Adams; secretary-treasurer, Dr. D. W. Smith, Nashville.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Application of the Principles of Local Anesthesia to Treatment of Peripheral Nerve Manifestations. Robt. P. Caron, M.D. American Journal of Surgery. March, 1934.

The author, while admitting that local anesthesia for painful conditions is empirical, it is a relative minor procedure, and gives symptomatic relief. A long list of conditions are mentioned where local anesthesia injected subcutaneously over painful areas have given temporary relief to pain and sometimes permanent cessation of pain. Some of the conditions mentioned are psychalgias, neuritides, or local irritation paresthesias, referred pain of somatic origin, pain of cardiac origin, neuralgias, myalgias, sciatica, joint pains, pruritis ani, intolerable pain due to malignant disease, painful scars, and many other conditions.

A plea is made for symptomatic relief of peripheral nerve manifestations. The principles of the application of local anesthesia are often effective in giving such relief. Radical operative measures are not indicated in many conditions until more conservative methods have been given a fair clinical trial. The best relation of physician to patient is thereby maintained.

**DERMATOLOGY**

By E. E. BROWN, M.D.  
Doctors Building, Nashville

**Epidermomycosis and Flatfoot.** By David Lieberthal, M.D., and Eugene P. Lieberthal, M.D., Chicago, Ill. *Archives of Dermatology and Syphilology.* March, 1934.

For the past two and one-half years the authors have paid particular attention to the association of mycotic infection of the feet with flatfoot from a moderate to an advanced degree. Of the one hundred ninety-five patients observed in this series of cases there were ninety per cent who had flatfoot. Thirty per cent also had hyperhidrosis. They thought this was probably due to the relaxation and depression of the bony structures of the foot which in turn exerted undue pressure on the softer structures below, such as the muscles, the tendons, the nerves, the arteriovenous and lymphatic systems, thus lowering the resistance of the skin. Ten cases of the series which presented advanced vesiculopustular lesions on the soles as well as intertriginous changes were highly resistant to all forms of treatment.

Five additional cases which presented moderately advanced vesiculopustular lesions on the soles as well as intertriginous changes responded slowly to the ordinary forms of therapy.

These fifteen cases, which were accompanied by flatfoot, were referred for orthopedic correction. The mycotic changes then began to respond more rapidly to ordinary forms of treatment. Not only did the lesions of the skin clear up rapidly, but the hyperhidrosis was also materially influenced.

**INTERNAL MEDICINE**

By R. B. WOOD, M.D.  
Medical Arts Building, Knoxville

**Tobacco, Alcohol, and Angina Pectoris.** By Paul D. White, M.D., and Trimble Sharber, M.D., in *Jr. A. M. A.* Vol. 102, No. 9. March 3, 1934.

A resume of the literature was given in reference to the relationship of tobacco, alcohol, and angina, followed by the observation of the authors in a series of 750 private patients who did not have angina and 750 who did have the disease, with reference to the amount of tobacco and alcohol used for a period of twelve years before onset of symptoms.

Comparison of these habits of the two groups shows that 46.1 per cent of the angina group had been abstainers from tobacco, while 24.4 per cent had used tobacco to excess, in contrast to 37.2 per cent of the control series who did not smoke, and 33.5 per cent who smoked excessively.

Total abstainers from alcohol was the history of 64.4 per cent of the cases of angina pectoris and of 61.7 per cent of the control series. Only 1.1

per cent drank excessively, while 8.4 per cent of the control drank much alcohol.

It appears from this study that neither the use of nor the abstinence from tobacco or alcohol plays an important role in the genesis of angina pectoris. In occasional cases the use of tobacco apparently aggravates or precipitates attacks of angina, and in occasional cases alcohol helps to prevent or to relieve such attacks.

**The Treatment of Pellagra with Certain Preparations of Liver.** By Julian M. Ruffin, M.D., and David T. Smith, M.D., in *Am. Jr. Med. Sciences.* Vol. 187, No. 4.

To test the efficacy of various kinds of liver in the treatment of pellagra, the authors placed 23 patients with the disease on a diet adequate in all respects except deficient in Vitamin G ( $B_2$ ). At the same time, 14 pellagrins were placed on the same diet with the pellagra factors present.

While improvement might take place in those placed on the inadequate diet, direct exposure to the sun rays resulted in producing dermatitis.

Ten patients with active pellagra showed satisfactory remission after the oral administration of 90 cc. daily of an aqueous extract of liver.

Five patients on the same basic diet showed little or no improvement when given liver extract 343 intramuscularly in doses of 5 cc. daily. When the oral aqueous solution was substituted a dramatic clinical improvement began between the third and fifth days and continued until recovery.

**Dinitrophenol Poisoning.** By Fenn E. Poole, M.D., and Robert B. Haining, M.D., in *Jr. A. M. A.* Vol. 102, No. 14. April 7, 1934.

Though writers have cautioned against the unsupervised use of this potent stimulator of metabolism, it is being widely used as a weight reducer. While doses for animals have been experimentally determined, the dose for human beings, though perhaps safely apportioned, cannot take into account possible allergic accidents.

No antidote is known and symptomatic remedies do not relieve the toxicity.

The authors report death in a nurse who had taken the usual dose prescribed on the label of a purchased package.

Tainter and Wood of San Francisco report a fatal case of dinitrophenol poisoning in a physician who ingested from 2.4 to 5 gm. at a single dose, dying eleven hours later.

**OPHTHALMOLOGY**

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

**Sodium Evipan: A New General Anesthetic.** *American Journal of Ophthalmology.* May, 1934.

Every so often comes the announcement of a new agent for local or general anesthesia, usually heralded by an impressive array of figures to prove



how harmless it is or how efficacious or how rapid or how what-not. During the course of the subsequent eighteen months, from six to ten further articles in praise of the preparation accumulate, with probably one or two adverse criticisms. By that time the various larger clinics are trying it, and within about two years the real value has been determined and the anesthetic has its place established in the cosmos.

During the past year, a large number of articles have appeared in the German literature extolling the virtues of a new general anesthetic used by the intravenous route, called sodium evipan (evipan natrium). It is a barbiturate with a complex chemical formula. The anesthesia is complete within sixty seconds from the beginning of the injection and lasts from fifteen to twenty minutes. There is a complete muscular relaxation, sufficient to permit of any type of surgery. The big advantages to the ophthalmologist are twofold: the elimination of the anesthetist from the neighborhood of the operative field, and the complete absence of excitation, or nausea, or vomiting upon awaking. Other general anesthetics possess one or the other of these advantages, but none have both.

Sodium evipan is used as a freshly prepared 10 per cent solution, and is injected intravenously. The amount varies with the age, weight, and general condition of the patient, the maximum dosage being 10 cc. The only known contraindications are asthma, disease of the liver (the drug is eliminated rapidly by the liver), and such general debility as would render any anesthetic hazardous. The danger to life seems to be slight, as twenty thousand injections have been reported from one clinic with but one fatality. The first 4 cc. must be injected very slowly, not faster than 1 cc. per fifteen seconds. After that, the rate of injection may be increased. The patient falls asleep, the eyes shutting and the jaw dropping, in from thirty to sixty seconds from the time the injection is started; that is to say, after 2 to 5 cc. have been injected. The operation may be started when 2 cc. more have been injected. The pulse rate rises rapidly up to 130 or 140 per minute, but within four minutes is nearly normal again. A slight drop in blood pressure occurs simultaneously. The effects of the anesthetic last from fifteen to twenty minutes, depending upon the amount used and upon the weight and vitality of the patient. If more time is required, 2 cc. additional may be injected just before the patient wakes, and repeated if necessary. Awakening from this anesthesia is not accompanied by any physical or mental excitation nor by any physical discomfort, such as nausea. No untoward after-effects have been noted.

I have used this anesthetic in about a dozen cases: enucleations, iridectomy upon painful eyes, muscle operations in apprehensive individuals, and other ophthalmic operations that require not more than fifteen minutes. Sodium evipan seems to fulfill the needs of the ophthalmologist for a general

anesthesia of short duration, unaccompanied by physical excitement or exertion upon awakening.

HARRY S. GRADLE.

## SURGERY—GENERAL AND ABDOMINAL

By ROBIN F. MASON, M.D., F.A.C.S.  
735 Medical Arts Building, Memphis

**The Treatment of Late Intestinal Obstruction; Recent Experimental and Clinical Studies.** Robert Elman, M.D., St. Louis, Mo. S. G. & O., 175.

In this paper the author deals with acute obstruction, high and low, seen late, and therefore most serious, as it offers the greatest problem.

Early cases do well enough in competent hands under orthodox treatment.

He gives the present mortality rate as about 60 per cent. In 1926, over 10,000 deaths in the United States were caused by obstruction.

For convenience, he divides obstruction into high and low, high obstructions being those in the neighborhood of the pylorus, low being those at the ileocecal valve or below.

### HIGH OBSTRUCTION

Persistent vomiting consisting of ingested food and intestinal juices, gastric and pancreatic, constitutes the most prominent symptom. Distention is usually limited to the upper abdomen. Increasing weakness and prostration follow with rapid, weak pulse, and eventually death, unless arrested.

These changes occur more rapidly than in low obstruction. It was assumed for a long time that "toxemia" caused death.

We know that this so-called toxemia really is an anhydraemia accompanied by loss of vital body fluids and chemicals with loss of kidney function, etc.

### LOW OBSTRUCTION

Having found the cause of death in high obstruction, the author hoped to use his knowledge in the treatment of low obstruction, but found conditions radically different, viz.: vomiting not apt to be prominent and blood changes very slight. Moreover, the use of parenteral solutions but slightly influences the fatal outcome.

In low obstruction the "toxic" symptoms appear only after days of illness. The pulse may be normal and blood pressure unchanged. Yet not infrequently sudden shock and death appear within a few hours.

At autopsy, no cause for death was obvious. Pediatricians see this same phenomenon in so-called intestinal intoxication.

The author had noted that sudden deflation of the bowel above a long standing obstruction produced a rapidly fatal termination. This same phenomenon was produced experimentally many times. Therefore he was forced to the conclusion that great distention, suddenly released, was the cause of death. The distention is an early symptom and

prominent. This leads to accumulation of gas and poisonous fluids in the distended loop.

Distended loops absorb poorly, if at all. Sudden release of this distention brings about an overwhelming absorption of toxic fluid, thus causing death. As a result, the treatment of slow decompression using a Pezzer catheter as an enterostomy tube, releasing 100 cc. every half hour, has, in his hands, brought about remarkably beneficial results. He cites cases in proof of this thesis.

As to systemic treatment, he believes in the administration of Hartman's solution (modified Ringer's solution) in large amounts intravenously and subcutaneously. Where there is strangulation with necrosis he advocates immediate exteriorization of the involved segment, treating the obstruction as a separate entity as above outlined.

#### SUMMARY

The cause of death in high obstruction (stomach duodenum) is probably physicochemical, due to loss of water and salts from the blood into the vomitus, and can be successfully combated with modified Ringer's solution.

The cause of death in low (ileum colon) obstruction is due probably to distention suddenly released, and is to be combated by slow decompression and restorative measures.

The author, of course, advocates appropriate surgery in those cases which are able to withstand a radical operation.

### UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
Medical Building, Knoxville

Referred Pain from the Female Urethra. A. I. Folsom and Jo C. Alexander. *J. Urol.* Vol. XXXI, No. 5.

Symptoms due to pathology in posterior female urethra are not commonly recognized. These symptoms are quite similar to those found in the male, and are due to pathology of a cluster of glands situated in the first portion of the female urethra. A photograph of a cadaver specimen is attached showing polypoid masses filling almost the entire sphincter. These masses are inflammatory in origin. Another specimen resembling a collar type prostate is shown, and this bladder also shows marked trabeculations, an indication that an obstruction did exist.

Such lesions produce not only a local irritation of the bladder, but serve as an irritating stimulus for referred pain.

Attention was first called to the female urethra rather by accident. Patients were noticed to be benefited simply by the passage of an instrument. One patient with constant dull, aching pain in the loin was completely relieved by treatment of the urethra. The iliac regions on both sides are quite common sites for pain due to urethral pathology. Another symptom is a dull, aching pain across the

entire lower abdomen. Many of these cases have been operated for pelvic disease or misplacements without benefit. They state that they have never seen bladder symptoms due to uterine displacements. (Amen.)

Low lumbar and sacral backache may be due to urethral pathology. Pains in the legs are also commonly complained of.

"Any pain within two feet of the female urethra, which does not seem adequately accounted for by some definite pathology, should be suspected of being due to the urethra."

A lengthy discussion of this paper is appended.

### BOOK REVIEWS

Modern Drug Encyclopedia and Therapeutic Guide.

A presentation of 8,160 modern, nonpharmacopoeal, medicinal preparations, comprising: 1,878 drugs and chemicals, 535 biologicals, 860 endocrines, 1,563 ampule medicaments, 209 medical foods, 129 mineral waters, 2,344 individual and group allergens, and 642 miscellaneous products, by Jacob Gutman, M.D., Phar.D., F.A.C.P.

For the use of physicians, dentists, pharmacists, and medical students.

Publisher: Paul B. Hoeber, Inc., New York. Copyrighted by the American Journal of Surgery, Inc., 1934. Price, \$7.50.

The author, in his foreword, tells us the purpose and plan of the volume. To quote: "This treatise is designed to meet the demand of the progressive physician for information concerning the modern therapeutic agencies placed at his command by Research Laboratories. It presents without bias or comment all the popular nonpharmacopoeal preparations and other remedies found useful in the treatment of disease.

"The pharmaceutical concerns of America spend millions of dollars yearly for the discovery and preparation of medicinal agents of high merit. Medicine is indeed indebted to these organizations for the many epoch-making discoveries and invaluable additions to modern therapeutics made during the past few decades; most of the curative sera, vaccines, allergens, potent drugs and endocrines are the result of their researches. The physician, however, has at present no adequate means of keeping informed on all the newer additions to his armamentarium; commercial descriptions of these reach him at inopportune times and usually find their way into the wastebasket, thus seldom being on hand when wanted; and except for the official publication of only council-accepted products, there are no authoritative sources of information embracing all the modern preparations. To provide such source is the purpose of this work.

"An endeavor is here made to present without favoritism or discrimination all the nonofficial products—proprietary, patented, council-accepted, and others, that are popular with the medical profession. Descriptions, statements, analyses, and all



other data are offered without change or comment, but as found available in the numerous standard works and references consulted, or as obtained from the producers and distributors of the respective products. Every effort has been made to present the information accurately yet concisely, excluding elaborate discussions, quotations, theories and other time-consuming topics of but little practical value to the clinician. The embodiment in a single volume of such a mass of material necessitated the use of phraseology as brief as was found consistent with the complete description of every important feature."

W. M. H.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1933. Cloth. Price, Postpaid, \$1.00. Pp. 188. Chicago: American Medical Association.

The main bulk of the volume, which is, incidentally, considerably increased over that of recent annual volumes, is taken up with reports on products which the Council has found unacceptable for inclusion in New and Nonofficial Remedies. Of special note are: The report on Alpha-Lobelin, a drug upon which the Council in 1927 issued a preliminary report but which is now found not to have established itself as a respiratory stimulant of as great usefulness as carbon dioxide and oxygen; the report on a number of preparations marketed by the Upjohn Company with unwarranted, misleading and unscientific claims; the report on Clavipurin, a preparation of the alkaloids of ergot, marketed without adequate declaration of the composition and without adequate standardization under a nondescriptive proprietary name with unwarranted therapeutic claims; the report on Diamypsal, another pyridine derivative proposed for use in bacterial infections, convincing evidence for the therapeutic value of which is lacking; the report on Euphydigital, an irrational mixture of digitalis and a theophylline preparation marketed under an uninforming, proprietary name, with exaggerated and unwarranted claims for its therapeutic value; the report on Guphen, stated to be the guaiacol ester of phenylcinchoninic acid, marketed with unwarranted therapeutic claims under an uninforming, proprietary name and having no proved advantage over its constituents administered separately; the report on Niazo, a pyridine compound of unsubstantiated value as a urinary antiseptic; the report on Omnadine, a preparation recognized for use for nonspecific lipoprotein therapy practically as a cure-all; and the report on a group of endocrine preparations of the Rovin Laboratories variously unacceptable as being of indefinite composition and of undemonstrated therapeutic value.

A feature of marked current interest in this volume is the preliminary report on Alpha-Dinitrophenol, the new drug for acceleration of cellular metabolism. The Council voices a warning on the dangers attending the use of this drug; this warning has been increasingly justified in reports of fatalities since the appearance of the Council's

report in July of last year. Other preliminary reports which make this volume one of the most interesting issued by the Council in recent years are those on Dilaudid, a new narcotic drug related to morphine; Fuadin, a new antimony compound for use in the treatment of bilharziasis and granuloma inguinale; and Hippuran, a new product for intravenous and oral urography. The comprehensive and definitive special report on estrogenic substances furnishes a much needed review of the present status of such products in gynecologic therapy. The Council insists upon the doctrine that basic laboratory investigation of these substances should precede clinical use. Of interest to hospital authorities, especially in connection with the book, *Hospital Practice for Interns*, recently issued by the Council in collaboration with the Council on Medical Education and Hospitals, is the special report, *The Hospital Formulary*, by Hatcher and Stainsby of New York. It outlines a plan characterized by the highest regard for the principles of rational drug therapy. Of more general interest is the Council's second report on the intravenous use of barbital compounds which is the result of a questionnaire sent to representative physicians. In view of the answers to the questionnaire, the Council reaffirmed its previous decision concerning the limitations of intravenous use of barbital compounds; namely, that these preparations should be administered intravenously only in a limited number of conditions in which administration by other routes is not feasible. The report carefully details these conditions. The lengthy report on the omission of Pyridium is an outstanding example of the meticulous fairness characteristic of the Council's treatment of the manufacturers of commercial preparations. In connection with the omission of Pyridium should be noted the report which declares Azophene (Mallophone) not acceptable. This product has been shown to be identical with Pyridium and the Council considers the claims for its usefulness as a local, general, or urinary antiseptic as unwarranted, as are those for Pyridium.

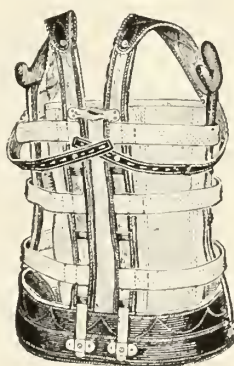
*New and Nonofficial Remedies, 1934*, containing descriptions of the articles which stood accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1934. Cloth. Price, Postpaid, \$1.50. Pp. 510; lx. Chicago: American Medical Association.

*New and Nonofficial Remedies, 1934*, has the same pleasing format and helpful mechanism that has characterized it in past years. The enrichment of the indexing started a few years ago is continued and its value even increased by some desirable simplification of cross references.

The Council has made the usual careful revision of the book. The general article, *Lactic Acid Producing Organisms and Preparations*, has been practically rewritten. The chapter on Arsenic preparations has undergone some revision, especially in the statement concerning Neoparsphenamine. The descriptions of Chiniofon and Vioform have been

revised in the light of recent developments in the treatment of amebiasis. The article on Ethylhydrocupreine has been revised to delete references to Optochin Base, which has been omitted; Optochin Hydrochloride has been retained, being recommended only for external use. The description of Typhoid Vaccine has been revised to give the dosage of the combination of typhoid and paratyphoid organisms and to mention the use of typhoid vaccine in nonspecific protein therapy. A number of revisions of the Council's Rules has been made, particularly with reference to the names of products, which is one of the most frequent and troublesome of the problems with which the Council has to deal. Comparison with last year's volume will show that revisions of more or less importance occur in many other chapters.

Among the preparations newly included in this volume are: Aminophylline, a double salt or mixture of theophylline and ethylenediamine, with the advantage of greater solubility over other theophylline preparations; the new alum precipitated diphtheria toxoid; Neo-Iopax, a new medium for intravenous urography; Benzedrine, an ephedrine substitute; serum containing type II pneumococcus antibodies, which the Council has recently recognized as worthy of clinical trial in view of improved preparations and technic; Autolyzed Liver Concentrate and Extralin, two new liver preparations for use in the treatment of pernicious anemia; Metycaine, a new local anesthetic; and Sodium Morrhuate, a salt of the fatty acids of cod liver oil, proposed for use as a sclerosing agent.



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# THE JOURNAL

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### NOTES ON THE PRESENT-DAY DIAGNOSIS AND MANAGEMENT OF CANCER OF THE RECTUM\*

FRED W. RANKIN, M.D., Lexington, Ky.

WHEN a patient is presented with a diagnosis of cancer of the rectum, usually he asks two questions in this order: First, is a colostomy necessary; and, second, what are my chances of survival? To the first, one may arbitrarily answer in about 99 cases out of 100, yes. To the second, one may say good, and by comparison with other portions of the gastrointestinal tract, excellent.

The question of colostomy deserves more space than time permits, but suffice it to say that without an anterior stoma, radical operations cannot be done. May I not be permitted a few words on the symptomatology and recognition of cancer of the rectum?

I use the term "cancer of the rectum" in its commonly accepted sense, but I wish to emphasize the fact that most cancers of the rectum are in reality cancers of the rectosigmoid juncture; an anatomical segment which is approximately 3 to 4 inches in length, one-half being intraperitoneal and one-half being extraperitoneal. At this fixed segment of the bowel two out of three cases of cancer of the rectum will be found to occur. Of the remaining 33 per cent, 2 per cent will be found to be in the anal canal and 31 per cent in the ampullary portion of the rectum. The fact that the vast majority of cancers of the rectum occur at the rectosigmoid juncture accounts for the

obstructive symptoms which so frequently accompany malignant disease in this location, the rectosigmoid juncture being a fixed point and having no mesentery. The chances are that an encircling growth in this neighborhood will produce an obstruction ranging from the usual chronic type to the acute variety as it is occasionally met with.

The most constant sign of rectal malignancy is bleeding which usually appears on the stool or in the stool, and while it is probably one of the earliest symptoms that the patient notices, it must be remembered that bleeding cannot be produced until the growth has been present for a considerable period, or at least long enough to have invaded the mucous membrane. Frequently growths attain a huge size before breaking through the mucosa and producing hemorrhage. This hemorrhage is usually small in amount and not associated with much anemia except in very far advanced cases. Bright red blood, while more often coming from nonmalignant than malignant lesions, should invariably stimulate one to eliminate cancer as a diagnosis before assuming that the cause is innocent.

A fairly constant sign of cancer of the rectum and rectosigmoid is irregularity of bowel habit. This occurs in many instances in the earlier stages of the disease before either blood in the stool, pain, tenesmus, or obstructive symptoms manifest themselves. It is characterized by alternating attacks of

\*Read before the Tennessee State Medical Association, Chattanooga, April 11, 1934.



diarrhea and constipation, which may be of short duration, but are important as evidencing the possibility of a lesion in the lower gastrointestinal tract. In a series of cases which I once studied, constipation alone was the predominating symptom in 55 per cent of the cases, and diarrhea was the most common symptom in 20 per cent.

It is not at all unusual to find the question of deformed stools being considered as pathognomonic of cancer of the rectum. Let me emphasize strongly that the deformity of the stools is caused by a stricture low down, or by spasm of the anal sphincter, and if the growth be situated at the rectosigmoid juncture or in the wide ampullary portion where no obstruction is present, it will not be noticed. Pain is an inconstant symptom, sometimes severe but usually moderate in amount. The rectum, as is well known, is not sensitive to pain, and consequently rectal cancers only produce profound pain where invasion of a nerve segment has taken place.

Tenesmus and irritation of the bowel in its effort to rid itself of not only its content but the growth itself are in direct proportion to the proximity of the growth to the sphincter muscle. An accurate diagnosis of cancer of the rectum and rectosigmoid can always be made by proctoscopic examination. An examination with the index finger of course is of the utmost importance and will recognize the vast majority of these lesions by the feel which is usually characteristic. If the patient is placed in the knee-chest position and is instructed to strain against the examining finger, growths at the rectosigmoid juncture are frequently rather easily palpated, at least one can touch the distal end. Vaginal examinations in women almost invariably will demonstrate the rectosigmoidal growths. There is no reasonable excuse for not making a digital examination of the rectum in all cases where the symptoms point to the rectum, but this unfortunately is not universally practiced, as the high percentage of cases of cancer of the rectum operated upon for hemorrhoids attests.

Proctoscopic examination, while it cannot be satisfactorily carried out by the inexperienced in every case, is not in reality a

difficult examination, and provided the rectum is properly cleaned out, the proctoscope can be inserted at least as far as the rectosigmoid juncture without danger of harm to the patient or without difficulty, if it is carefully done. The proctoscope will reveal not only the characteristics of the growth, which is usually a single, semifixed, punched-out ulcer of the rectum or a papillary adenomatous type of lesion, but in addition it will show its size, its mobility, and the degree of obstruction to the bowel. All of these factors are important because the obstruction of the growth, fixation, and extension to the perirectal tissues are second only to liver metastases in estimating its operability.

Biopsy as an adjunct in cancers of the rectum is important and I have used it over a period of years, but it is not so essential in making a differential diagnosis between cancer and a benign lesion as it is to estimate the grading of the growth according to Broders' index of malignancy. The grading is an important factor and assists in the selection of operation or other measures or a combination of both.

The problem of treatment of cancers of the rectum and rectosigmoid resolves itself into either: first, radical extirpation; second, combination of radical surgery and irradiation; third, irradiation; or, fourth, palliative procedures either surgical or by irradiation. The status of radium and X-ray therapy in the treatment of cancers of the rectum and rectosigmoid is still not sufficiently stable to warrant its routine employment. Whether or not further experimentation and clinical data will find a wider field of usefulness for these agents may probably be answered in the affirmative, but certainly in the light of present-day experience the procedure of choice is radical extirpation of the offending growth, although this might be modified in certain cases to radical extirpation of the offending growth with both preoperative and postoperative irradiation.

There are a number of difficulties in the routine application of radium to the treatment of rectal cancers: first, the application of radium directly to the malignancy; and, second, the selection of malignant

tumors which are best suited for having irradiation, or in other words, are radio-sensitive. Certainly the more cellular active growths seem to respond more satisfactorily to the use of radium. The action of radium is to cause a shrinkage and inactivity of the malignant lesion in the group of cases where it has an appreciable influence on the cancer cell.

As a palliative measure, I have had little favorable experience with irradiation. I have not seen the lessening of hemorrhage and diminishing of toxemia from absorption as has been frequently described in the literature. I think that one may agree with Bowing and his colleagues who think that cancer of the rectum is still a surgical problem and that roentgentherapy is a valuable adjunct. "Radium is less satisfactory in the treatment of cancer of the rectum than in the treatment of adenocarcinoma of many other cavities of the body." "Few examples of undoubtable cure by radium alone have been reported in the literature; however, in most cases, there has been improvement in the patient's condition and relief of symptoms."

### TREATMENT

The selection of an operation for cancer of the rectum and rectosigmoid should be predicated upon the principle of radical extirpation of the local growth with blocked dissection of the adjacent tissue and lymphatics. A fundamental law, I believe, is to apply a radical operation to a patient who may withstand a formidable procedure and yet have at hand other maneuvers less extensive which are available to the group of individuals who are less sturdy. One will find that only about 50 per cent of the whole group of cases as they present themselves will be available for any type of surgical extirpation.

Operability should be extended as much as possible without increasing the operative mortality, and the standards of operability must be held as flexible. One obviously could not attempt a radical extirpation where there were metastases already in the liver unless one had a very satisfactory reason for doing so. Hepatic metastases, fixation, and immobility are the three

guides to inoperability. Immobility is not so necessarily a contraindication to radical extirpation as are hepatic metastases because one not infrequently finds a growth to recede after decompressive measures have been instituted. It becomes less fixed and more removable after the inflammatory process which is responsible for its attachment has undergone recession. Malignant extension rarely produces the very marked fixation which one finds in inoperable cancers—it is usually an inflammatory reaction around the growth. The size of a growth is far from being any indication of its operability; in fact, one is frequently happily surprised after removal of a large semifixed growth, particularly in the right colon, to find that it has not metastasized to the regional lymphatic glands, and that the prognosis is a favorable one. One takes into consideration, of course, the patient's ability to withstand a formidable operative procedure in selecting a type of operation for an individual case, and aims preliminary preparatory measures toward the rehabilitation of the individual for this purpose.

The types of operation which I believe may fill most of the needs of the operating surgeon as applied to a series of cases of rectal and rectosigmoidal cancer are in order of their desirability, but not necessarily their availability: first, combined abdomino-perineal resection of the rectum and rectosigmoid in one stage (Miles operation); second, combined abdomino-perineal resection of the rectum and rectosigmoid in two stages (Rankin operation); third, colostomy and posterior resection; fourth, local excision of the growth with or without preservation of the sphincter muscle or with a posterior sacral anus; and, fifth, palliative measures. My own feeling is that the choice of operations in all cases where it is at all feasible should include as radical an operation as possible, namely, one which, as Miles suggests, removes the mesentery of the sigmoid, because into this the lymphatic drainage of the rectum is directed. He feels, and I believe that he is perfectly warranted in so doing, that it is just as essential to remove this tissue in operations for cancer of the rectum and rectosigmoid as it is to remove the glands



in the axilla in doing a radical operation for cancer of the breast. The choice of operations, then, becomes an individual problem in which one, in the majority of cases, utilizes the operation which he has best improved his technique to perform.

My own choice is the two-stage combined abdomino-perineal resection which utilizes the principles of the Miles one-stage operation and yet can be done with a lower mortality and applied to a larger group of cases. I have applied this operative procedure to 46 per cent of the operable cases in the past three years, and with a mortality of eight cases in a series of 85. I believe that this is a mortality which I could not lower materially without limiting the operability figure quite markedly. The operation is performed after a period of preliminary decompression and rehabilitation which is always advisable in two stages with an interval of some three to six weeks between them.

The first stage of the graded combined abdomino-perineal operation consists of an abdominal search for metastases, and the establishment of a single-barreled colostomy. The exploration, which should be carried out in a routine manner beginning with the upper abdomen and exploring the growth last, is best made through a low mid-line incision, which need not be large but only sufficiently roomy to admit the searching hand.

When the peritoneum has been opened, the gloved hand is thrust upward to the liver, the surfaces of which are carefully palpated for metastatic nodules. Then the exploration proceeds from above, downward. The presence or absence of glands in the bifurcation of the common iliac arteries is noted as well as around the pancreas and along the aorta. The pelvis is explored last for deposits on the pelvic peritoneum and the growth is felt lightly and gingerly to test its mobility and to estimate the chances of resecting it. Let me emphasize the necessity of gentle approach to the local growth because of the infective organisms in the pericolic tissue. Because the permeability of the large bowel to organisms is hugely increased by ulceration and obstruction, and since both of these factors are almost al-

ways present in rectosigmoidal growths, it is evident that vigorous manipulation at exploration may spread organisms in the peritoneal cavity with a resulting widespread infection.

If at exploration it is decided that the growth is resectable and that metastases are not present, a convenient portion of the sigmoid, that is, the highest point in the loop, is selected for the colostomy. The mesentery close to the bowel is divided, but only sufficiently to permit the proximal end of the bowel to be drawn out through a stab wound in the groin; while the distal end is inverted and returned to the peritoneal cavity. The utmost care is taken to establish under actual vision that the blood supply to both ends of the bowel is not interfered with.

The bowel is divided between two Payr clamps, the upper one of which has been thrust through a stab wound in the flank, selected as the site most satisfactory for taking care of a colostomy apparatus. The second clamp is approximated to this but applied in the opposite direction, the bowel is then cut across with a cautery and the proximal end is drawn out while the distal end is inverted and dropped back. The clamp on the proximal end completely obstructs the bowel, and is allowed to remain for 48 to 72 hours. Men invariably tolerate this obstruction and gas accumulation less readily than women. Sutures are not placed in the bowel wall to attach the colostomy to the peritoneum. The stab wound is made through the musculature of the abdominal wall and is only sufficiently large to allow the bowel to be pulled out easily.

The question of not suturing the peritoneum of the bowel to the peritoneum of the abdominal wall has, in my experience, justified itself. Without sutures, nature establishes a snug agglutination in the first 48 hours, and I have observed no tendency on the part of the loop to retract. It is questionable whether the mortality is higher in manufacturing colostomies of this type than in the ordinary loop colostomy in which the bowel is not divided. My own mortality, including all types of colostomies, has been 3.5 per cent in operable cases, and twice that high in cases

found inoperable for various reasons, but nevertheless explored.

Two important points in establishing a colostomy from the patient's standpoint are the prevention of prolapse of the mucous membrane of the bowel, and herniation around the colostomy. If one may accomplish a single-barreled colostomy without herniation or prolapse, and the individual establish correct bowel habits, so long as the stools are formed and the lower bowel emptied once or twice a day, little discomfort results therefrom.

Rectal irrigations are instituted about the tenth postoperative day and are continued daily up to the time of the second stage. A two-way rectal tube has proved a most satisfactory method of cleansing the bowel without exerting undue pressure on the inverted stump. It has been my experience that these people improve rather quickly after the obstruction of the bowel is relieved and efforts are made to build up their general strength.

The resection of the second stage is done by beginning posteriorly but finally ending up with an abdominal incision also. The posterior method of partial mobilization permits extensive dissection of the pelvis up to the peritoneum. It is possible thus, without opening the peritoneal cavity, to clean out the hollow of the sacrum and ischiorectal fossa, sacrificing the levator ani muscle and clearing away the gland-bearing tissues around the prostate gland and seminal vesicles in the male and from the posterior vaginal wall, cervix and broad ligaments in the female.

The patient is placed face-downward on the table as for a posterior type of resection, with the hips elevated and the anus closed with a purse-string suture. The anus is encircled with two incisions which are carried up and joined a little above the sacrococcygeal articulation. Undermining these incisions, it is possible to remove as much fat and gland-bearing tissue from the ischiorectal fossa as is necessary and at the same time sacrifice a great portion of the levator ani muscle. The coccyx is disarticulated from the sacrum and dividing the fascia propria opposite the sacrococcygeal articulation, a blunt dissection of

the hollow of the sacrum follows. The lateral dissection is now carried completely up to the peritoneum which is not opened. The rectum is now encased in a rubber glove which is tied tightly around the cuff and pushed back into the hollow of the sacrum and the posterior wound closed. Up to now, the peritoneum has not been opened and the operation has been carried on under transsacral anesthesia.

The patient is now turned on his back and the anterior part of the dissection carried out. The low mid-line incision which was used for exploration is opened again and enlarged to extend from the symphysis to an inch above, and to the left of the umbilicus. No exploring is done. The pelvis is carefully packed off with wet sponges and the turned-in end of the bowel sought. The peritoneum over the inferior mesenteric vessels is incised and both ureters identified. The left ureter runs close to the vessels, but the right one is well away from them. The inferior mesenteric vessels are now ligated close to their origin, and doubly ligated if there is much fat in the mesentery. Excepting only the middle sacral artery, the terminal branch of the aorta, practically all of the blood supply is thus tied. The incisions in the peritoneum are carried forward toward the base of the bladder on both sides, and the bladder is separated from the rectum. With gauze dissection the gland-bearing tissues on both sides of the bowel are wiped mesially and the entire segment is lifted out through the abdomen. Peritonealization of the pelvis is quickly and easily made. There is no difficulty in peritonealizing the female pelvis because the broad ligaments and the uterus may be substituted for any defect left. In the male, with a little care in making the peritoneal flaps, one may also manufacture a new pelvic diaphragm with little effort.

The abdominal wound is closed and drainage of the pelvis is made by opening the posterior wound and inserting a tube and if necessary to control oozing, a small gauze pack. The large cavity made by the dissection must obviously heal by granulation. The second stage of the operation is not usually difficult, and while it has the disadvantage of opening the abdomen twice



in a short period, I feel that it not only utilizes the most satisfactory principles of a radical procedure, but at the same time extends the scope of the operation without increasing and with a possible lowering of the immediate mortality.

### PROGNOSIS

It is a well established fact that after the successful application of any radical extirpative maneuver for relief from cancer of the rectum, the prognosis parallels that for cancer in other parts of the body and is more favorable than that for cancer elsewhere in the gastrointestinal tract, save only for the colon. Many factors combine to influence favorably cancer of the rectum treated radically, among them the relatively low grade of the growth and the consequent invasion of adjacent lymphatics, as well as the slow rate of its development.

In my chairman's address before the Surgical Section of the American Medical Association in 1933, I reported a series of 753 cases of colonic and rectal cancers which had been removed a sufficiently long period to study the end results fairly accurately. Of this group, 300 of the cases were cancers of the rectum and rectosigmoid which had been extirpated by a group of surgeons utilizing practically the same type of technique and employing all of the recognized standard operations. The grading of the group by Broders showed that in the total group of 753 cases of both colonic and rectal cancers, 63 per cent of Grade I, 51 per cent of Grade II, 31 per cent of Grade III, and 24 per cent of Grade IV were living and without demonstrable recurrence five years or more after their successful eradication.

In this study, the rectal growths were less favorable than the colonic growths, and the left colonic growths were less favorable

than those on the right side. In the whole group of rectal cancers it was found that 38 per cent, regardless of the grade, glandular involvement, and other unfavorable complications, were alive and free from recurrence at the end of five years. This percentage can be enhanced a great deal if one studies a selected group, carefully operated upon by extremely radical types of procedures.

For instance, Miles and Jones both, by their radical operations, have been able to report a given series of cases where the three-year cures range around 70 per cent, and the five-year cures around 50 per cent, but in this particular group that I studied, the end results following all types of operation were taken into consideration.

The operative mortality in these cases—both colonic and rectal—revolved around 10 per cent. Occasionally in some years it would be higher than this and just as often lower, but that percentage seems to me a satisfactory average, which is not unreasonable for such a radical procedure and which means the accepting of border-line cases which under other circumstances might be considered inoperable.

The operability figure is the important one, namely, 50 to 65 per cent, and I would emphasize that as an influencing factor in prognosis it is more desirable that the horizon of operability, and a widening of selection of cases to take in the border-line cases is more important than an urgent effort to reduce the operative mortality much below 10 per cent.

There has been a great advance in the past decade not only in technical details of operative maneuvers but in the diagnosis, preoperative preparation, and postoperative care of the patients. With the profession and laity more alert to the symptoms of the earlier stages, no doubt we will see a still greater progress.

## PROBLEMS OF TUBERCULOUS INFECTION IN CHILDHOOD\*

G. D. LEQUIRE, M.D., Maryville

**B**EFORE taking up the problem of childhood tuberculosis, it is well that we consider the natural protective mechanism of the child which prevents it from being destroyed by the invading bacillus before it develops an immunity against the disease.

This function is possessed by the endothelial and connective tissue cells, but is strongest in the leucocytes, and particularly the lymphocytes. Of all structures and systems of the body, the lymphatic system plays the greatest protective role; in fact, it is upon this system that the child depends almost wholly for his protection during his early years. It is during this period, also, that the lymphatic system is most active.

In early childhood the lymphatic tissue is prominent. An abundance of it is placed as an outer defense to guard the vulnerable points of the body, such as the vault of the pharynx which meets bacteria that are taken in through inhalation, the root of tongue and sides of the fauces which are particularly exposed to the bacteria that enter the body by way of the mouth, and in the lower ileum which is exposed to infection by the bacteria that have been ingested.

In case bacteria pass these outer defenses, a second line of defense is arranged in the lymphatic glands which are so situated that they receive drainage from every tissue of the body, and which are located in great abundance near the specially exposed surfaces as exemplified in the cervical, mediastinal, and mesenteric glands.

These masses of lymphatic tissue, represented by the pharyngeal, lingual and faucial tonsils and by Peyer's Patches, as well as the lymphatic glands, have the special function of forming lymphocytes and are better provided with the cells upon which the little child must depend for his protection than any other tissue of the body.

As the child grows older and his body

cells, generally, take upon themselves the function of producing specific proteolytic enzymes for his protection, the lymphatic protection which has served him during his early years is no longer so necessary, consequently the lymphatic tissue atrophies.

The importance of the lymphatic tissue in the protection of the little child should be appreciated. The part played by the tonsillar tissue in Waldeyer's Ring in warding off infection, or, failing this, receiving the infectious microorganisms into tissue which is best prepared for limiting their action, should be emphasized.

The tonsillar tissue should not be sacrificed unnecessarily and it should be the aim of the physician to save its protective function to the child until he has come in contact with bacilli and other microorganisms in sufficient numbers to cause his cells generally to take upon themselves the function of producing specific defensive enzymes. After that has taken place, lymphatic protection assumes a secondary role, and the tonsillar tissue is not so necessary.

Tonsillar tissue which is the seat of dangerous focal infection, or which is interfering with the drainage of the nasal cavities, or threatening the integrity of the ear, or in other ways threatening harm, will have to be sacrificed. Where no such cause for removal exists, however, the child should be given the benefit of their protection during his earliest years. They should not be sacrificed unnecessarily as though they were of no value.

Tuberculosis is primarily an infection of childhood, and therefore, according to our conception, the struggle between the child and the tubercle bacillus begins practically at birth, although the first two years show comparatively little infection. This struggle goes on until the resisting power of nearly every child is overcome by the tubercle bacillus to the extent that infection is established.

Coincident with infection goes another

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process, that of the production of a specific immunity. The child takes a few bacilli into the body and they are destroyed. Being destroyed, their bodies go into solution. The specific products derived from the bodies of the tubercle bacillus are set free. Specific products are also given out into the tissues from the focus of infection when it has been established.

These bacillary substances stimulate the body cells and make them sensitive to further inoculations with tubercle bacilli or their products and cause them to produce specific protective enzymes which both remain attached to the cells and are cast off into the circulation. The result is that in this way a gradually increasing, specific, resisting power is built up until the individual is able to withstand large doses of bacilli, while large numbers at first would be fatal.

In speaking of immunity in tuberculosis we must bear in mind that we are speaking of a relative immunity, not an absolute one. While these infections produce sufficient protection to overcome ordinary inoculations of the tubercle bacilli, yet it is probable that no individual is absolutely protected from further infection. If the inoculation consists of a sufficient number of tubercle bacilli or if repeated inoculations sufficiently large take place, a new infection will most likely result.

As mentioned above, the child gradually develops a specific resisting power to tubercle bacilli. This immunity attains such a high degree in advanced tuberculosis, particularly in adult life, that an individual may have millions of bacilli within his body and may be pouring them out in great numbers through the air passages, or, after swallowing them, they may pass through the intestinal tract, and yet his specific resistance may prevent implantation from taking place, as previously mentioned.

Owing to the fact that there is very little specific immunity or resistance against tubercle bacilli during the first years of life, if an infection occurs at this time, it is very apt to be severe in character and, if of large numbers, usually fatal.

We must conceive of the child as lacking in specific defense, so there is nothing to

limit infection when bacilli gain access to the tissues except the natural elements. As a result, the bacilli, if not destroyed, scatter more widely than they do in adults, thereby affecting many organs.

Tuberculosis is primarily a lymphatic disease. We mean by this that when tubercle bacilli enter an organism which has not previously come in contact with the same, or, which has not attained a high degree of specific cellular defense, the bacilli pass through the mucous membrane readily and, unless destroyed by the lymph elements, are taken to the glands, where they form a nidus and set up foci of infection.

The study of tuberculosis of the lymph glands is of great importance because of its bearing upon the question of early infection and the gradual development of cellular immunity. Glandular tuberculosis is preeminently an infection which takes place prior to the establishment of cellular immunity. Nonglandular infection, on the other hand, is preeminently an infection in which the bacilli are implanted in the tissues after a cellular defense has been established, their retention in the tissues depending upon the reaction which occurs between the specifically sensitized cells and the tubercle bacilli. It will be noticed that, while we do not commonly find glandular tuberculosis in adults, yet the preponderance of infection in childhood is glandular and the greatest amount is found in the first five years of child life.

The tubercle bacillus has a tendency, when first taken into the body, to settle in the lymph glands. If it enters through the tonsils or mucous membrane of the mouth it passes at once to the lymph glands that drain these regions. If it passes directly into the lungs, along with the inspired air, or, indirectly through the intestines and thoracic duct, it may form a primary nidus in the lung, but the preponderance of the infection takes place in the peribronchial lymph glands which drain that particular area of lung tissue involved.

If it passes through the intestinal wall without producing a distinct local disturbance, it may pass on into and produce infection of the corresponding lymph glands

or be taken up by the lacteals, carried through the thoracic duct and poured into the circulating blood, to be strained out in the lung or in some other portion of the body, there to produce a local lesion. The character of this local lesion will depend on whether or not the individual has been previously infected. If a primary inoculation, the infection will have a tendency to escape the focus and go on to the neighboring lymph glands, but if it is a reinoculation, the sensitized cells will attempt to localize the infection in the tissues where first implanted.

The reason tuberculosis in infants is more often fatal than in adults, and tuberculosis in sucklings more fatal than in older children, is because the child has not had time to successfully fight inoculations of tubercle bacilli and develop a sufficiently high degree of specific immunity thereby.

It has been stated by good authority that one person in every ten dies of tuberculosis, and there are about four persons ill of it for every one who dies. Every person who dies of it is ill and expectorating bacilli on an average of three or four years before death. Among the poor, where families are large and people are crowded together and obliged to live under unsanitary conditions, there is probably ten times as much tuberculosis as there is among the well-to-do, and the poor are the people who are most careless of their expectoration and consequently most dangerous to their fellows. Under these circumstances we are confronted by a situation which offers an almost unlimited opportunity for infection.

Contamination through milk, through articles of food, merchandise, through the habits of children crawling on the floor and putting their hands from the floor to their mouths, likewise the habit of children putting things in their mouths and trading toys which have been used by others and the possibility of infection through flies, are all means by which the bacillus is brought into the body of the child.

The focus of disease which is established when infection occurs, the same as all metastatic foci from this original focus, may take one of three courses: It may go on to the rapid formation of active tuber-

culosis; it may heal at once, or later; and it may become quiescent for a time to break out later into active tuberculosis, but the most common course of massive infection during the earliest years of life is to go on to a rapidly fatal issue, the child yielding within two or three months to an active tuberculous process.

We believe that the protective properties of the tissues vary greatly at different times, under different physical and chemical influences, and that this is probably a very important factor in the action of the bacilli which may be lodged within the tissues.

Let us consider the effects of the tuberculous infection upon the child, even in case the lesion may not be manifest. We must recall that from unhealed lesions toxins are given off intermittently. These toxins not only affect the adjacent structures but their influence may be widespread. They seem to have a special predilection for the nervous system, and through it injure the body cells. A child who suffers from a lesion which is subject to frequent states of activity nearly always suffers from general malnutrition, a failure to grow and develop and an unstable nervous system. These children are more prone to disturbances on the part of the lymphatic system and are also more prone to general systemic disturbances.

Injury to the skin or mucous membrane is followed by a gathering of an extra number of leucocytes and an unusual amount of pus formation. We often find these children stunted in growth. He is not able to endure. He cannot carry on his school work like other children, neither can he endure play as he should. The young boy or girl is not able to endure mental or physical strain. He may be very bright in his studies but he falls back on account of lack of physical and nervous endurance. After this period has been reached the harm has largely been done and it is very difficult to remedy it.

Early lymphatic tuberculosis does not receive the attention that it should. Its recognition is in reality the key to the tuberculous problem, so far as both prevention and cure are concerned, and therefore



of prime importance. Even though the glands themselves may not be enlarged sufficiently to be detected by physical examination or the X-ray, they may still be a danger to the patient. This form of tuberculosis assumes its main importance in childhood. Its recognition depends upon the tuberculin test. In the absence of symptoms, should a positive tuberculin test show in a child in whom careful examination reveals no lesion anywhere, then we are justified in assuming that the infection is as yet probably quiescent and confined to the lymphatic glands. On the other hand, should there be symptoms or signs such as accompany active tuberculosis then the condition should be classed as active glandular tuberculosis.

### CONCLUSIONS

1. In all infectious diseases, the lymphatic apparatus of children is the first and most effective barrier in the defense of the body against pathogenic microorganisms.

2. The lymph glands develop and maintain a certain immunity against both endogenous and exogenous reinfection with the same bacteria.

3. At present most of the tuberculous disease is glandular during the first three years of life, involving mainly the intrathoracic nodes. Many of the infants thus infected succumb to tuberculous bronchopneumonia, but the vast majority bear the infection well.

4. In infants, tuberculous disease manifests itself in a bacillema, an acute general infection, like typhoid or septicemia, and when the bacilli are disseminated by metastasis in any part, they produce lesions akin to those of pyemia.

5. Death due to tuberculosis is extremely rare during the first six months of life, during the next eighteen months the disease is encountered in the form of acute miliary tuberculosis, and tuberculosis of the glands, bones, and joints.

6. Between five and ten years is the age period at which tuberculosis is least common either as a disease or as a cause of death. It is noteworthy that just at this period of life most of the infections with tubercle bacilli take place.

7. Infection begins during the first year of life, keeps on increasing during every subsequent year until at the age of twenty years few individuals have escaped it.

8. During recent years tuberculosis of the bones, joints, and glands have become almost extinct in the white population of this country.

9. Mortality is comparatively high during the first year of life, but then it declines so that between three and twelve years, just the period when most infection occurs, the proportion of deaths is least, and only after the fifteenth year does the mortality rise to its highest point and keeps at it throughout life.

10. Pulmonary phthisis, which is a common cause of death in adults, is not necessarily preceded by infection with tubercle bacilli immediately before the disease manifests itself by symptoms. It shifts the problem of prophylaxis of infection to the child and of disease to the adult.

11. Bear in mind that neither the morbidity nor the mortality rates from tuberculosis reach anywhere near the rates of infection; therefore, it is clear that in children infection with tubercle bacilli is not necessarily followed by disease.

### DISCUSSION

DR. J. C. OVERALL (Nashville): Mr. Chairman and Fellow Members: There is nothing that I can greatly add to this paper. First of all I want to congratulate Dr. LeQuire upon bringing to your attention such an important subject as tuberculous infection in childhood. I believe that if we attack the problem in the manner that he has suggested we will not only control to a large extent tuberculosis in children, but also in adults. I will try to emphasize one or two points that he has mentioned showing that if we control this problem in children it will of itself be largely controlled in adults.

He mentioned the fact that in early childhood the form of tuberculosis is largely of the lymphatic system and that this is a mild form of tuberculosis. Formerly, say twenty-five to thirty years ago, it was believed that all tuberculosis in children was of the very severe form. Why? Because we did not have the tuberculin test and we did not use the X-ray to the extent that these two are being used now. Consequently, the large majority of cases of tuberculosis that were diagnosed were only those severe forms that we now are wont to call the adult type of tuberculosis or the miliary or the tuberculous meningitis type. The mild cases of tuberculosis of the glands were not diagnosed.

He mentioned one other point in connection with this, that in certain stages of tuberculosis we have a bacteremia very similar to typhoid or to the other infections. That is something that may be true, and yet the point is being debated at the present time, particularly in regard to Loewenstein's work, who has gotten positive growths of tubercle bacilli from blood cultures at various stages in the disease. That point is disputed by some, but it has been confirmed by other workers, such as Griffith.

If that is true, then during the stage of tuberculosis we have a generalized infection which, as he also brought out, may be localized in any susceptible organ in the body. In the early childhood it localizes itself more often in the glands, because they are the first line of defense in protective mechanism.

There is one thing which he has brought out about which there also has been quite a bit of discussion this past year. That is whether this primary infection in childhood confers a certain degree of immunity to the adult type of tuberculosis. Stewart at Lymanhurst this past year, in going through 10,000 cases that had passed through Lymanhurst in the past ten years, has shown that approximately seventy-five per cent of the children that show the adult form of tuberculosis have shown a primary infection at some past date. In other words, of the children that show consumption or the adult type of tuberculosis, seventy-five per cent were infected at some previous date. That throws the question wide open again as to whether our BCG inoculation is doing more harm than it

is good, and as to whether if a child has a primary infection as a child and throws that off, it really gives him resistance to throw off the adult form of tuberculosis later on. So if, from this evidence, we are going to do anything much with prevention of tuberculosis, we will have to use our childhood cases to run down the adult cases and protect our children from infection. In other words, the tuberculin test assumes still greater importance, because we can frequently find adult cases from the tuberculin test alone in a child. There again I want to say that Dr. LeQuire mentioned a very important point in the matter of the tuberculin test. Any child that shows a positive test, whether it is to a tenth or a milligram of tuberculin, certainly by all present knowledge ought to have the tuberculous infection present somewhere in the body, and it is a pretty fine line to draw between tuberculous infection and tuberculous disease. If that child has a positive tuberculin test, then he should not only be considered as a potentially active case of tuberculosis, but he should be treated more or less as one. In other words, not necessarily put to bed and kept out of school, but he should be followed and reexamined, not only with tuberculin, but with X-ray, every six months to a year, and in that way we will help to protect that child from future reinfection. Also, that child's family and surroundings should be examined very carefully for the source from which he obtained that infection.

I enjoyed the doctor's paper. I think it is very timely and very important that we all should give much study to tuberculous infection in childhood.



## GAS GANGRENE\*

PERCY A. PERKINS, M.D., F.A.C.S., Memphis

**G**AS gangrene, prior to the World War, was considered a rare disease, but during the war it constituted one of the great problems of the military surgeon. Since then, in spite of the knowledge gained through experience, gas gangrene is becoming more and more prevalent. This increase, no doubt, is due to the numerous injuries caused by automobiles and machinery. A survey of automobile accidents, which an insurance company made in 1929, showed one million injuries and 31,500 deaths. A recent examination of the records of the Memphis hospitals, made to ascertain the number of gas gangrene cases during a five-year period, showed 63 cases and 35 deaths, a mortality of 55½ per cent. This number is large compared with that of the Guy Hospital in London. They reported only 23 cases during a six-year period, and a mortality of 50 per cent.

A gas bacillus infection demands decision and prompt action, for untreated it usually terminates fatally within 72 hours, and those doing traumatic surgery should be on the alert as to its possibilities. No doubt many of you here who served in France can testify as to this fearful infection, which usually terminated fatally or maimed its victims for life.

A review of the literature on this subject shows that the treatments in vogue are so varied that I believe it in order to review some of the salient points regarding this infection.

Gas gangrene was first described about 80 years ago, but the epoch-making period began with the discovery of a new anaerobic bacillus by Welch and Nuttall in 1892. This bacillus is the same as the *perfringens* described by the French a little later. There are many gas-forming bacilli, but the five most important are: *Bacillus welchii*, *bacillus oedematiens*, *vibrion septique*, *bacillus sporogènes*, and *bacillus histolyticus*.

The *bacillus welchii* is found in 80 per cent of all cases in civilian practice. The *welchii* bacillus is found in the intestinal tract of practically all human beings and animals; consequently, the ground, the fur of animals, and even the skin of humans, may harbor this resistant, spore-forming germ. Cultures have been grown from clothing made of wool. One writer says gas gangrene is more common in winter because the injured or post-operative patients become infected by woolen clothes or woolen blankets.

Although the gas bacillus may be present in a wound, gas gangrene may not develop. For this bacillus to thrive, there must be two conditions: devitalized tissue and absence of oxygen. A good blood supply inhibits the growth of gas bacillus because of the amount of oxygen carried in the blood stream. This infection is one essentially of muscles. The bacillus thrives on sugar; hence, the predilection for muscle sugar. At post-mortem examinations, the liver also is found filled with gas bubbles (foamy liver). The virulence of the infection is increased by its being mixed with other bacteria. Gas and poisons of enormous potency are formed, causing edema, necrosis, and hemolysis. The infection spreads along muscle fibers and is confined to a group or groups of muscle by fascial planes; however, it may extend through loose areolar tissue or the blood stream. Just ahead of the affected groups of muscle are intramuscular planes filled with serous edema. The organism follows the edema across the joint lines. On account of the arrangement of the shoulder group of muscles the prognosis in an amputation of the arm is not as favorable as in the leg.

It has been suggested that this disease not be called gas gangrene, as the name might influence some to wait for signs of crepitation before making a diagnosis, not realizing the serious condition. This infection is the result usually of a certain type of injury, such as crushing injury, com-

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pound fracture, or gunshot wound; however, it occasionally develops from minor injuries. A fatality attributed to an infection following a hypodermic recently occurred at the General Hospital, and there was an infection and fatality in the obstetrical department at the Baptist Hospital.

### SYMPTOMS

The early symptoms are pain in the wound, a rise of temperature, rapid pulse, headache, and listless expression. The X-ray will show gas in the tissues before other clinical signs are evident. Smears and cultures show the anaerobic bacillus. Blood cultures are not positive until late in the disease and rarely even then. The skin around the wound will have a coppery color, there will be foul brownish discharge, and possibly air bubbles, the muscle will have the appearance of cooked meat and will have lost the vascularity and contractility, and later, edema and crepitation appear. After twenty-four to thirty-six hours all signs and symptoms increase; the temperature and pulse are markedly increased, and the patient goes into a state of septic collapse or shock.

### TREATMENT

#### *Prophylactic:*

Careful and adequate debridement where the tissues are badly damaged; removal of foreign bodies and blood clots; sterilization of wound with iodine; drainage and use of Dakin's fluid in those cases badly soiled and damaged; prophylactic dose of tetanus and perfringens antitoxin. The laboratories have recently increased the total number of units of bacillus welchii and vibron septique in each prophylactic dose from 1000 units of each to 4000 units of each.

#### *Curative:*

Free incision; excision of diseased muscle; wound left open; insertion of Dakin tubes, irrigating wound every two hours; frequently dressing the wound. If the process is advancing rapidly, a guillotine amputation should be done. This type of operation causes less shock and trauma, is more quickly done, and affords better drainage than the flap methods. Antitoxin should always be given, but to be effective, the antitoxin must conform to the type of in-

fection. Whether or not to give polyvalent or univalent serum is a controversial question. The English are content to rely on the perfringens antitoxin alone. On the other hand, Weinberg, of Pasteur Institute, France, and some authorities in this country, are inclined to favor the polyvalent serum, and a combination of perfringens and vibron septique is now being supplied for both therapeutic and prophylactic purposes. The therapeutic dose of the antitoxin varies. The best results apparently have been with doses ranging from 20,000 to 100,000 units daily until the patient improves. These massive doses are believed by some to be unwarranted. A recent publication on the treatment of active tetanus, a comparable anaerobic infection, shows that the best results are from 30,000 to 60,000 units.

The serum may be given intravenously or intramuscularly. At the General Hospital it is believed that when the large doses are given intravenously, the reaction may be lessened by diluting the serum with saline or 5 per cent glucose solution. This at least insures that it not be given too rapidly. To inject the serum about the wound may prevent absorption of a small amount of the toxin, but on the other hand, it may prove harmful by breaking down the natural barrier of granulation tissue. Cases are on record in which cures were effected by use of the serum alone. In my opinion, however, to depend on serums alone does not seem logical or surgically sound. If the patient's condition is critical or he is in a state of collapse, blood transfusions are invaluable. As to the various antiseptics used on the wound, there are many, but I prefer Dakin's solution and hexylresorcinol (S. T. 37). The committee of the Hospital for Joint Diseases in 1931 recommended Dakin's solution or potassium permanganate. Others use boric acid, or weak solutions of iodine or formaldehyde. In England they irrigate with peroxide and flavin.

### REPORT OF CASES

#### *Case I*

Male, colored, age 29. Injured January 30, 1933, in a truck accident; was admitted



to General Hospital the same date. He had a compound comminuted fracture of right tibia; temperature 98, pulse 60. X-rays of leg showed fracture at both upper and middle third, bones in good position. Wounds were cleansed, dressings applied, and Thomas splint was applied with traction.

On January 31 the temperature was 99.6, pulse 90.

On February 2 the temperature was 99.6, pulse 104. On the same date diagnosis of gas gangrene was made. The leg was incised in four planes, the wound debrided and Dakin tubes inserted. 100 cc. perfringens antitoxin was given intravenously with 500 cc. of 5 per cent glucose.

On the 3rd, 50 cc. perfringens in 200 cc. saline was given intravenously.

On the 4th, 100 cc. perfringens in saline was given intravenously.

On this date the patient came under my care. His temperature was 102½, pulse 148, poor volume. The patient was perspiring profusely, vomiting green fluid, and was semicomatose. There was a foul, brownish-red discharge from the wound; the leg was swollen to just above the knee, and there was crepitation to the knee level. The muscles had the appearance of cooked meat. The foot was cold. A smear showed the bacillus welchii.

This was apparently a hopeless case. The man had reached a state of septic shock. We debated whether or not to attempt any further surgery. We decided, however, that amputation was his only hope.

Two hundred cc. of 25 per cent glucose was immediately given intravenously. His blood was typed for transfusion, and about two hours later 350 cc. citrated blood was given. Under ethylene anesthesia a quick guillotine amputation was done at middle third of thigh. The blood vessels were tied with linen. Dakin tubes were placed over the wide open wound and dressing applied. The anesthetist then announced that she could no longer get any trace of pulse. Caffein and adrenalin were given while he was on the table, and he responded.

After putting him to bed, the usual anti-shock procedures were carried out: saline hypodermoclysis, stimulants, heat, etc. The

wound was Dakinized every two hours and dressed often.

On the following day his pulse was 100, temperature 99.; 25 cc. perfringens was given intramuscularly.

On February 6th his temperature rose to 102 and pulse to 130, and he developed hiccoughs, pain in arms, and the stump was covered with a grayish-looking exudate. His condition seemed rather discouraging.

On the 7th, however, his general condition began to improve, but he had some fever for the next ten days.

On the 13th a large abscess on the left chest wall in the axillary line was opened.

At the end of two weeks the wound was sufficiently clean to start the skin traction on the stump. Sterile adhesive plaster strips with about ten pounds of weight traction was applied (similar to the Bucks extension). At this time I discontinued Dakin's solution and began using S. T. 37. On account of the wet dressings it was necessary to adjust the adhesive straps daily. After the skin edges were pulled down a short distance, transverse straps of adhesive were applied to turn the skin edges in. On account of the large amount of adhesive used, a five-yard roll was sterilized in the autoclave and was always ready for use. If the crenoline is not pulled off the adhesive before sterilization, it really sticks better.

At the end of six weeks the stump was covered nicely by soft parts and skin. The patient was discharged April 3rd. He was seen last in September. He is now wearing a cork leg and he feels fine.

Pathological report: Gas in tissues; muscles greenish-yellow in appearance; bubbles of gas; some hemolysis, and some necrosis of muscles. The process did not extend beyond the knee. Diagnosis: Gas gangrene.

### *Case II*

Male, colored, age 30. Was admitted to the hospital February 5, 1934. The right foot had been mangled February 1st in a conveyor in an oil mill. His physician had amputated the great toe. On admission, his temperature was 104½ and pulse 140. He was in a state of collapse. The typical foul odor was noticeable on entering the room.

The roentgenograms of foot, which were made before the dressing was removed, showed loss of the great toe, two fragments of bone remaining in the tissue, and gas in the tissues on dorsum of foot. Removal of dressing showed that the entire top of foot was gangrenous, exposing and involving all tendons. The swelling extended to ankle. Both smear and culture were positive for bacillus welchii. Caffein and adrenalin were given, also 500 cc. of 5 per cent glucose solution were given intravenously. As soon as he reacted, a quick guillotine amputation was done at middle third of leg, under gas anesthesia. Another 500 cc. of 5 per cent glucose solution was then given intravenously; 5,000 units of perfringens serum were given intravenously with the glucose, and 5,000 units intramuscularly. The wound was Dakinized every two hours. Next morn-

ing his temperature was 101 and pulse 100. Another 50 cc., or 10,000 units, perfringens serum was given. His temperature for about one week ranged from 99 to 100, and his general condition improved daily. On the tenth day, skin traction with weights was begun on the stump. The convalescence from that time was uneventful. When the patient was discharged, March 30th, he had a well covered and healed stump.

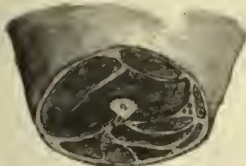
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#### LANTERN SLIDES



Adhesive skin traction



Section through middle 1/3 of thigh

JCA



Stump at 2 months—completely covered by skin and soft parts.

#### DISCUSSION

DR. R. F. MASON (Memphis): Mr. President and gentlemen of the society: I think that Dr. Perkins is to be congratulated on the results that he has obtained in these cases. My experience has not been so good. I don't suppose there is a more dramatic disease than gas gangrene. It comes so suddenly, so unexpectedly and nearly always so fatally. I think when we consider the thousands of accidents that occur every year on our streets, it is remarkable that we have so few cases of this type, especially when the infecting organisms, which are really three, are so commonly found, not only in the human excreta but in the excreta of herbivorous animals, the dirt on the street, even in gun wads and in wool.

The chief offender is the bacillus of Welch, which, as you know, masquerades under several different names; then the Vibrion septique of Pasteur, and



the edema bacillus—those really constitute the grand three.

In the handling of these cases there are two points of paramount importance. The first, of course, is early diagnosis, and the second is prophylaxis. If we could remember those two things all the rest would be very simple.

One of the chief symptoms to look for by way of early diagnosis is prostration of the patient with the type of wound which you know is susceptible to this infection, beyond what you would expect in such a case. I saw a case not long ago, the only one, by the way, that I personally have had for years, of a little Negro boy who was run over by a bus, and that was his chief symptom. He died, but he died really before the gas infection had had time to develop fully because he was very badly injured. Of course, after the limb is swollen and edematous and bullae appear and gas is exuding, it is a very grave question as to whether or not the patient has any chance to survive.

We might paraphrase and say that when the doctor hesitates the patient is surely lost. If he is going to treat him successfully he must treat him very radically and very quickly.

I saw a few cases in France in which it was possible to relieve the patient by the removal of a group of muscles, say, of the forearm, or maybe one muscle in some cases, and the use of Bull's serum. At that time that was all we had. We didn't use any prophylaxis in the way of vaccine at all as we do now. Of course, that should be given just as we give tetanus vaccine. But the main thing in the way of prophylaxis, in my opinion, is a thorough mechanical cleansing of the injured parts, because we must have tissue that is below par for this germ to be able to bring about infection. So prophylaxis is the thing, and if we do that, I think it is worth more, when properly applied, than every other form of treatment that we have up to the present time.

DR. WILLIAM I. HOWELL (Lexington): I have listened to Dr. Perkins' paper and appreciated it very much.

The mortality is too high for the treatment to do much good. In the last three years in all of my cases of infection, contrary to the usual teaching of the higher authorities I have been using hydrochloric acid intravenously. In gunshot wounds, stabs, everything of that kind I give my patient 10 cc. of 1:1500 hydrochloric acid intravenously and repeat it every day until the patient is out of bed. Many of the teachers say there is nothing to it, but I have given over 2,000 shots of it with never a bad result and with some of the most outstanding results of anything that I have ever used. I think it is worth a trial. Every one of these cases that I find I give hydrochloric acid intravenously. Twenty-five years ago it was thought that it took an expert technician and this could only be done in hospitals. We have thousands of men now who are giving intravenous solutions of different kinds.

To illustrate what is going on, I have a letter here from a drug house in New York, dated the 15th day of March, stating that in the past six months they have manufactured and sold over 100,000 shots; somebody is giving intravenous shots all the time. Every man who gives the hydrochloric acid a trial is sold on it. If he gives it with a prejudiced mind he won't get any results, but if he will go on and give it with an unprejudiced mind and give it a thorough trial he will be sold on it. Half the medical men in my county are using it today.

DR. C. R. CRUTCHFIELD (Nashville): I think Dr. Perkins should be congratulated for bringing this subject before the medical society, not only for his excellent results and for the points that he emphasized in his paper, but also for the fact that he brought a message of hope for this particular type of case.

Fifteen years ago tetanus was considered almost hopeless. At the present time the mortality from tetanus is a great deal lower than it was at that time. The reason for that is because the doctors have learned to make an early diagnosis and have learned to treat it energetically. The same thing applies to gas infection, which is the same type of organism.

There are three points the doctor brought out which I think will bear emphasis. The first one is prevention. In every case in which there is contamination from soil or possibility of contamination from soil in which there is an open wound, we have routinely adopted the practice of giving tetanus antitoxin. I think that is the routine practice of most men who do traumatic surgery. But we have not adopted the practice of giving perfringen. I think the practice of giving the combined serum should be emphasized, especially in wounds which we cannot thoroughly clean.

The second point which I think should be emphasized is thorough debridement. There are some cases in which you get gravel and dirt ground into the muscle. If you cannot excise the muscle in doing debridement, I think you would do well to scrub with a scrub brush, and you can get out a good part of the grease. I find ether is very good, especially where we have a great deal of dirt, and especially oil, in combination with automobile accidents.

I never have had a case of gas gangrene where a thorough debridement was done. We have had two cases of gas gangrene come up following a colostomy for carcinoma of the rectum. The first case occurred some twelve years ago in a very old man, and he died within twenty-four hours, just about the time we made the diagnosis. The second case occurred a few years ago, and Dr. Haggard has reported it elsewhere, in which a lady with carcinoma of the rectum on whom we did a preliminary colostomy developed a progressive sloughing, with the symptoms the doctor has enumerated, within twenty-four hours after the colostomy was opened. From the odor and the char-

acter of the wound and the crepitation, we immediately suspected gas gangrene. A culture was made, a guinea pig was inoculated with the serum, but we didn't wait for the diagnosis. The patient was given infiltration entirely around the abdomen after the entire muscle down to the peritoneum was excised. The only thing that kept the colon open up in the wound was a glass rod. We were very much concerned about it, and it looked like a hopeless case. She was given antitoxin every eight hours until her temperature dropped and the spread of the gangrene was stopped. Within forty-eight hours, from the crest of the ilium, the anterior-superior spine, to above the umbilicus and down to her thigh was all gangrenous. We trimmed it all off and the tissue granulated up. We kept wet dressings of potassium permanganate upon the wound, and the patient got well.

We discussed whether we should do a skin graft or not. We had very little except granulation on top of the peritoneum. We knew she was going to have a big hernia, but didn't know whether the skin graft would do any good. While we were debating the matter the patient had to leave the hospital and was dressed at home, and she had a keloid tendency and the wound healed and granulated over and formed a big keloid, and it was better than any skin graft we could do, it was a natural truss.

This patient, much to our surprise when we examined the rectum some two months afterward, we found had had her carcinomatous mass disappear, except for one small nodule in the rectum. We excised that. It showed malignancy. We did a Kraske and the patient is now alive and well.

I wish to emphasize that even though the case is hopeless, if we give them enough antitoxin and do a thorough debridement and then use the antiseptics, especially those like permanganate, peroxide, sodium perborate, that put oxygen into the tissues and inhibit the growth of the bacteria, the case offers hope, but it is better to prevent the thing if possible. It costs you \$4 to prevent one; it costs you about \$250 to cure one after the Welch bacillus gets there.

DR. PERCY A. PERKINS (closing): Realizing that every one has the Welch bacillus in the intestinal tract, it is surprising we don't have more of these than we do. An ounce of prevention is worth a pound of cure. Good, clean surgery, thorough debridement, and you probably won't have any gas gangrene.

As to the doses of the serum, I do not believe that more than 75,000 units is indicated or will do any good.



## THE USE OF UNNA'S PASTE BANDAGE IN THE TREATMENT OF PATHOLOGICAL CONDITIONS OF THE LOWER EXTREMITIES\*

EARL R. CAMPBELL, M.D., Chattanooga

THIS discussion concerns the use of Unna's paste bandage in various pathological conditions of the lower extremities, but it particularly refers to the use of the bandage in the treatment of varicose ulcer.

In a normal person, three things aid in the progress of blood from the lower extremities: (1) the pressure exerted on the deep veins by muscular contraction; (2) negative pressure within the abdominal cavity produced by raising of the diaphragm in expiration; (3) competent valves which prevent the onward flow of blood from receding. The deep veins are placed among the muscles of the leg; thus, their walls are well supported. The superficial veins lie in the fascia just under the skin with nothing more for their support. Normally, the blood can pass from the superficial to the deep circulation, but not in the other direction. The deep, the superficial, and the communicating veins all have valves.

McPheeters has shown by the injection of lipiodol that the material remains at the site of injection when the part is still, but descends upon exercise. Thus, a chemically induced thrombosis is forced distally toward the smaller and branching veins where it will be arrested. This is his explanation for the rare development of emboli from injection of varicose veins.

The pressure in the dilated varicose veins is greatly increased; this increase in pressure causes a stasis. A decrease in the arterial blood supply is accompanied by a decrease in oxygen and an increase in carbon dioxide. The skin and subcutaneous tissue overlying the varicosities of the lower extremities have a decreased vitality and lowered resistance because of the above metabolic changes. Skin atrophy, dermatitis, scaling, and pigmentation take place. Trauma is frequent in this region. On account of the diminished arterial blood supply and

of the lowered resistance of the tissues, infection readily takes place and wound healing is slow. An ulcer is thus formed.

If there is a good deal of infection, a purulent exudate covers the base of the ulcer. As infection becomes less, healthy granulation tissue is seen. Surrounding the ulcer, changes in the skin take place. The skin may be smooth and glistening, or scaly. Pigmentation of a varying degree and extent is always present. In the advanced cases much scarring is seen, thus destroying the normal elasticity of the skin. Sometimes the pigmentation is so extensive that it encircles the leg.

The chronic dermatitis causes an itching which is oftentimes most annoying. The discharge injures normal skin and predisposes to infection. Edema follows when there is an obstruction in the lymphatic system and stasis in the venous system. Malignancy in varicose ulcer is very rare.

### TREATMENT

Before any treatment is instituted it is necessary that certain tests be made. The Trendelenberg test with the Perthes modification has been used, but the following test, I think, is much more applicable: tight bandage applied to the lower extremity to be tested; patient allowed to walk about for one to two hours; if no great pain is experienced and the toes do not become very blue, it is assumed that there is no obstruction in the deep veins.

The treatment consists of the cure of the varicose veins by injection and the support of the part by the Unna's paste bandage.

I use for my injections sodium morrhuate and the quinine-urethane solution, as these two seem to possess the necessary property of forming a most tenacious clot. The sodium morrhuate does not cause a slough when gotten into the subcutaneous tissues, whereas, the quinine-urethane does—the latter may also produce a perivenitis that will be of much concern to the patient dur-

\*Read before the Tennessee State Medical Association, Chattanooga, April 10, 11, 12, 1934.

ing the active stage, but, in the end, a splendid result will be obtained. I have one such case in my series. Five cc. of sodium morrhuate are used at one time, and from one to six cc. of quinine and urethane are used. I have used four cc. at one injection in a very large vein; a large tenacious clot was formed; a nice result was gotten.

Next, I want to discuss the supportive treatment. Here the Unna's paste bandage seems to meet the requirements. The idea of the application of the boot is that of Dr. Unna of Vienna. It is an old idea, but it is one that has been greatly neglected. A window was placed at the site of the ulcer so that it could be dressed. This, of course, was wrong.

Formula for Unna's paste to be used with Unna's paste bandage: four parts by weight each of pulverized zinc oxide and granulated gelatine (U. S. P.), and ten parts by weight each of water and glycerine. Suggested procedure in order of preparation: take eight ounces gelatine and twenty ounces of hot water and stir well (constantly stirring); slowly add eight ounces of zinc oxide and afterwards twenty ounces of glycerine; put in a double boiler and "cook" with continued stirring until the preparation reaches the consistency of thin paint. Apply moderately hot, but not so hot as to burn or blister, etc., with the use of soft varnish brush. Apply paste directly on surface of leg ulcer, using no intermediate material, such as dressings, salves, iodine, or other antiseptics, on the area. The area to be covered extends from the ball of the foot to below the knee of the affected leg. The bandage should be from two and a-half to three inches wide. Run bandage smoothly and snugly, repeating the process until three to five layers have been applied.

If thick scabs and an extensive infection are present, the part should be placed in a hot boric pack for twenty-four hours, or Epsom salts solution may be kept on for two or three days, with the patient in bed. Then it is necessary to decide upon what course to pursue, whether to inject the veins or to apply the boot. In most of my cases, I have applied the boot first, then injected the veins. After the swelling has subsided,

many veins can be seen that formerly were hidden. The boot works splendidly in cases where there is a marked eczema; five per cent tannic acid may be first used in these cases.

The boot offers a constant mechanical pressure which keeps the part from swelling, the arterial flow is increased and the excess carbon dioxide is replaced by the much needed oxygen. Thus, the normal metabolism of the involved tissue is restored. The bandage allows the wound to be bathed in its own discharge, producing the desirable bacteriophage action. The boot is decidedly beneficial on account of its hygroscopic and slightly antiseptic properties. So much of the secretion is absorbed that the skin does not become macerated.

The elastic stocking cannot serve the same purpose as the boot. Irrespective of the grade of rubber used in the stocking, deterioration takes place, and in a short time the stocking does not fit, even if it did at first. The determined type of patient cannot decide to leave the support off at night and then hurriedly leave for work the following morning without taking the time to put it on.

When should the boot be changed? (1) When a large weeping ulcer is present, much secretion will follow; this cakes, becomes hard, and is painful—put on a new boot. (2) As the edema subsides, the foot becomes loose; it should be changed so as to offer a snug support to the part. It is inexpensive and it does not take over ten minutes to put on a boot. Many of my cases keep the boot on from one to two months. One case kept the boot on for six months without reapplication. When I removed it, the skin was smooth, the ulcer had remained healed, and no swelling was present. After this, the varicose veins were injected. In certain cases the resultant scarring remains permanent in spite of an obliteration of the veins. The patient that has once had an ulcer must be constantly watched. Supportive treatment must be used when necessary, for these patients are constantly in danger lest a new ulcer should form. They should be very careful not to receive any trauma to the part.



Do not inject the varicose veins if a true phlebitis is present, or has been present recently. The fact that a low-grade infection is present in the ulcer is not a contraindication to injection.

Richard Cattell has devised a technique for injecting small veins beneath an ulcer. He calls this "fanning." The ulcer can be cured by an Unna's paste bandage so that it should not be necessary to use this painful procedure.

**Syphilitic ulcers:** In the south, the occurrence of syphilitic ulcers among the negroes is not infrequent. Practically all such ulcers are caused by the breaking down of cutaneous or subcutaneous gummata. A gummy material is present and the odor is foul. The ulcers are usually bilateral. They are often found in the upper third of the leg; they are deep, punched out, and the base is covered by a distinctive looking bluish granulation tissue. Immediately surrounding the ulcer is an area of pigmentation that remains after the ulcer has healed. Treat the disease and use an Unna's paste bandage.

**Mycotic ulcers:** Suspect a mycotic ulcer in all atypical lesions, which do not have the same appearance as a varicose or syphilitic ulcer. The etiology is the specific fungus. (1) Blastomycosis—the edge is raised and sharply defined, and is separated from the normal skin by an area of hyperemia. I have had one of these cases in Chattanooga. (2) Actinomycosis—the ray fungus is the cause. (3) Sporotrichosis: treatment—drain, excise; use iodides and radiotherapy.

In cases of cord injury from a fractured spine, a stubborn ulcer on the leg may develop.

Ulcers are found in cases with marked arteriosclerosis and in cases of diabetes mellitus.

The Unna's paste bandage will be found a most faithful friend in treating all of the above pathological lesions of the lower extremities.

The following conditions also offer an opportunity for the use of the Unna's paste bandage: (1) deep thrombophlebitis. After the acute stage is over the persistent application of the boot cures most of these cases.

As a result of a phlebitis, the veins become rigid, their valves become insufficient, and the same back pressure results as in varicose veins. The lymph stasis added to the venous stasis makes it hard to heal an ulcer that results from such a condition. The Unna's paste boot solves the problem. The patient can get out of bed and get about much earlier and his period of invalidism greatly shortened by this supportive treatment. One does a beautiful abdominal operation, the patient gets along well for a few days, then pain and swelling in one or both legs is noted. He feels that he would have been happy had this patient gone to some one else. He should welcome the Unna's paste bandage to help him get the patient out of bed and at the same time avoid the enormous swelling that takes place in these cases.

After the acute stage, any case of arthritis of the foot, or ankle, will be greatly helped by the application of an Unna's paste bandage. I have two of these cases at the present time: one was a chronic case, in which the arthritis involved both ankles, that had tried every form of treatment. She had gradually gotten worse so that she could hardly get around. This simple procedure caused her to be a most grateful patient.

I have one case under treatment that was operated several years ago for elephantiasis of both legs. She has a very extensive ulcer on one leg. It will be intensely interesting to see if this treatment will cure this ulcer. I know that it will reduce the swelling, help the circulation, and enable her to get around much better.

Traumatic or chemical ulcers that last a few weeks can be most successfully cured by the use of the Unna's paste bandage. An injury to the anterior surface of the leg that devitalizes the tissues leaves an area, or areas, of necrosis; one or more ulcers result and often some swelling of the part is noted; pain is experienced on walking. Many of these are compensation cases. Much money will be saved the patient and the insurance company by the application of an Unna's paste bandage and by sending these patients back to work. Usually when the bandage is removed in

from two to five weeks the lesion is entirely healed. A burn to one or both of the lower extremities is very easily treated in this way. An ulcer that has resulted from getting some of the quinine-urethane solution in the tissues responds better to this than any other form of treatment. I am sorry to say that I have been forced to institute this procedure in one case.

Fractures and extensive wounds, as gunshot, of the lower extremities: after the cast is removed from the leg that has received a fracture, a good deal of swelling usually takes place. The Unna's paste bandage supports the circulation and gracefully restores these patients to usefulness. Any case that has received a rather extensive wound to the soft parts, as a gunshot wound, needs a supportive form of treatment on account of the injury to blood vessels, with concomitant impairment of circulation. It is not necessary to wait for the wound to heal, just put on an Unna's paste bandage and send the patient back to work.

#### DISCUSSION

DR. J. J. ASHBY (Nashville): Mr. Chairman and Gentlemen: Dr. Campbell has certainly shown us some beautiful cases, and I think he is to be congratulated upon the results that he has gotten with the Unna's paste boot. He has enumerated various conditions in which he has used this successfully.

My discussion of this paper will be largely based upon the literature rather than upon a great deal of experience with the use of the Unna paste boot, as these varicose conditions seldom come to the orthopedic men for treatment.

Varicose ulcers are amongst the most serious and most disabling of the conditions of the leg. They have been treated more or less unsuccessfully for the past number of years. I think the reason for the lack of success, especially the lack of success in surgical treatment, is that the operator has not understood or has not taken into consideration the condition as a whole, the fact that the ulcer is affected by the varicose veins above as well as around the ulcer, and that local treatment by itself will not take care of the condition.

There are two conditions that must be recognized and corrected if these ulcers are going to be healed and if they are going to stay healed: First, we must recognize the primary pathological condition, which are the varicose veins; and, second, that in the varicose vein the blood flow is reversed. The blood flows from above downward instead of flowing from downward up, as is normal. The blood is pumped upward by the deep veins, then it regurgitates down the superficial veins, to be

pumped up again by the deep veins. Due to this reversal of blood flow during the process of stasis the tissues become water-logged and their resistance to infection and trauma becomes lowered and there is impairment of nutrition. This is an ideal condition for the formation of a varicose ulcer.

The treatment must be directed first to getting rid of the varicose veins; second, toward supportive measures, which Dr. Campbell has demonstrated so nicely.

The correction of the reverse flow is taken care of by injection of a sclerosing solution in the veins so that occlusion of the lumina of the veins is brought about. At first thought you would feel that to occlude the lumina of these large veins would mean to embarrass the circulation of the leg, but, as has been mentioned, these veins are full of blood, not blood from below, but blood from above, and that there is a cycle of blood flowing upward through the inner veins, downward through the superficial veins, then it has to be pumped up again, and to remove these varicose veins means to get rid of that extra load on the internal veins.

There are contraindications, as Dr. Campbell has said. One of the most important contraindications is that of occlusion of the deep veins. If the deep veins are occluded; if there is a varicosity of the superficial veins due to a compensatory enlargement so that the blood can go around the occlusion in the deep veins, then it would be disastrous to inject those veins. The method of putting a tourniquet over the leg rather tightly and allowing the patient to walk for an hour or two, as has been suggested by Perthes, is a very good test for whether or not these veins are occluded. If they are occluded, you have simply pain and swelling, otherwise not.

Other conditions of impaired circulation (Dr. Campbell mentioned several of them) can be treated by supportive measures, and the supportive measure is important. There are various ways. Different men have used different methods to get that support. Dr. Campbell uses the Unna paste boot. Dr. McPheeters uses the compression bandage. He first applies a little mild ointment, over that gauze, over that he places two layers of sheet wadding, then he takes an ordinary porous rubber bath sponge, large enough to cover the edges of the ulcer and about an inch beyond in circumference, then bandages that right over the ulcer tightly and dresses his wounds as often as is necessary, depending on how much of the secretion there is.

We have used a method followed by Dr. Beverly Douglas of Nashville, using the elastoplast bandage, which is a woven elastic bandage with the zinc oxide ointment on the inside to hold the pressure. This can be applied as often as necessary to cases which need a supportive dressing.

In all cases of pain in the lower extremities the feet should be examined and fitted with proper shoes. Flat foot and foot strain are the cause of much discomfort in the lower extremities and back and should be treated.



DR. E. R. HALL (Memphis): Mr. President and Gentlemen: Dr. Campbell has brought to our attention an old and tried remedy by a famous German dermatologist, Dr. Unna, and I am satisfied if he were living today he would feel rather proud of Dr. Campbell as one of his students and the work that he has presented.

I fancy that some of our old methods of treatment, like old friends and old wines, perhaps are better than some of the newer methods. Dr. Campbell has used this Unna's boot very successfully, and no doubt with his experience could use it better than any man in the audience this afternoon on first trial. You may have some other method of treating these conditions; you may treat them, as the gentleman who spoke before me, with elastoplast bandages. I like that method; I use it frequently; I think it is an exceptionally nice, easy way to treat them. You can also treat these conditions with a rubber sponge, as he mentioned. That requires more skill than the elastoplast bandage, and requires some experience in adjusting the sponge. All of these three methods strive for just one particular thing, and that is a mechanical support to the circulation.

In addition to Unna's boot, Dr. Campbell has one thing that Unna didn't know anything about during his lifetime, and it is a very valuable point. Professor Unna did not inject the veins, as Dr. Campbell has done, and he left the window, as Dr.

Campbell said, so that you might dress the ulcer. We know now that the fluid from the ulcer is very essential in healing.

Ulcers treated differently, with salves, wet dressings, no mechanical support or rest in bed, last for months and sometimes years.

Another simple measure that you can use in some of these cases (and I am satisfied lots of you have tried it during your internship) is what I call crisscross adhesive straps. That is another method of supporting circulation, not as extensive, and would not be applicable to some of the cases that he reported today. The case that he showed with the immense enlargement of the leg, I believe, is most likely disturbance to the lymph circulation rather than to the blood, but I believe that he will have equally as good results with his Unna's boot in that case, because it is supportive, as he had in his other cases.

I think it is also important in a few of these cases to follow his direction of partially eliminating secondary infection and reducing the swelling by rest in bed and a wet dressing.

DR. EARL R. CAMPBELL (closing): I appreciate the discussion. I really think the reason I have been able to get the results that I have in these cases is because all of my cases are private cases and therefore I receive their hearty cooperation and also their appreciation.

## FACTORS THAT INFLUENCE NEONATAL MORTALITY\*

MILTON SMITH LEWIS, M.D.,\*\* Nashville

THE REDUCTION of infant mortality has taken place to a large extent in the last half of the first year. Half of the infants who die in the first year of life perish before they are a month old; it is at this early period of life that reduction of mortality is most needed.

While some of the early deaths are inevitable, due for the most part to extreme prematurity and to congenital deformities, there is, however, a large number of early deaths which cannot be explained in this way, and the more thoroughly the causes of neonatal death are investigated the more certain it appears that a large proportion of the fatalities are preventable. The Maternity Association of New York has proven that the number of neonatal deaths can be greatly decreased by intensive prenatal and postnatal care other than the provision of skillful intranatal care and of proper anti-syphilitic treatment.

In the past there has been much controversy in regard to the effects of environmental conditions on the development and nutrition of the child before birth and in the neonatal period. Recent work tends to minimize the importance of such external conditions as malnutrition and unhealthy surroundings before birth.

Forbes and Woodbury (1) state that social and economic factors are of relatively little importance in explaining the high mortality among premature infants, and since much of the neonatal mortality is among infants born prematurely, it would seem that social and economic factors are of relatively little importance in explaining the high neonatal mortality.

Since more than one-half of the neonatal mortality takes place in the first two days of life, the question of feeding has not been considered an important factor in this death rate.

It is conceded everywhere that illegitimate children have a higher death rate than those born in wedlock. In birth registration areas in 1923 the respective rates are as follows: legitimate 3.8 per hundred births, illegitimate 8.2 per hundred births. A high percentage of premature births has been noted among the illegitimate. The death rate for syphilis in illegitimate infants is eight times as great as that of legitimate infants.

Age of Mother, Order of Birth—The age of the mother at the time of birth of the child is apparently related to the early loss of infant life. Forbes and Woodbury found that neonatal mortality was highest among infants of mothers under twenty and of mothers forty years of age and over. It was equally true that infants born after a short interval between births had a higher mortality rate than those born after a longer interval. Premature births were more common after the shorter intervals.

We are unable to state with any degree of certainty in this study what bearing illegitimacy and interval of pregnancy had on influencing the neonatal mortality as the information on this data was very rarely given in the records.

It is well known that a certain number of premature infants die because they are too feeble to carry on an independent existence. On the other hand there is a large number of premature infants that do not die merely because they are premature, but from some other cause, such as intracranial hemorrhage or infection.

Congenital debility is seldom in itself the cause of death; some definite pathological condition is usually present which is the cause of the debility. The same may be said of asphyxia, which simply means that the blood is not being sufficiently oxygenated, and may be due to pulmonary, cardiac or cerebral lesions. In other cases of asphyxia in which there has been interference with the placental circulation the accumulation of CO<sub>2</sub> in the blood may cause paralysis of the

\*\*From the Department of Obstetrics and Pediatrics, Vanderbilt University, Nashville, Tenn.

\*Read at the Tennessee State Pediatric Association, Chattanooga, April 9, 1934.



respiratory center: but asphyxia due solely to mechanical obstruction of the entry of air to the lungs by mucus or other secretion is extremely rare. In most cases an intact respiratory mechanism should be able to overcome obstruction of this nature, but cases no doubt occur where the secretions are excessive or where the infant is too feeble to expel them unaided.

Therefore, when we use these terms, congenital debility and asphyxia, we obscure our conception of the true causes of neonatal deaths, but if the factors are looked at from the point of view of the pathological lesions found at autopsy, we arrive at a more rational conception of the cause of neonatal mortality.

It is clear, therefore, that many of the neonatal deaths which previously have been attributed to ill defined causes fall into five definite pathological groups.

Group One—Cases where death was due to prematurity.

Group Two—Cases where death was due to birth injury.

Group Three — Cases where death was due to developmental defects.

Group Four—Cases where death was due to infection.

Group Five—Cases where death was due to asphyxia.

A brief consideration of the more important causes of neonatal mortality, with a view to the possibility of prevention seems worth while.

It is thought that an analysis of a group of cases from three hospitals that have a fairly large obstetrical service would shed more light on several phases of the problem for discussion.

While the number of cases analyzed is small when compared with the statistics of a large city, the hospital figures have the greatly added value of more accurate diagnosis and are in all respects much more reliable than records available from general statistics.

The foundation for this study is material from the obstetrical and pediatric departments of the Nashville General Hospital,

St. Thomas Hospital, and Vanderbilt University Hospital for the periods beginning January 1, 1929, to January 1, 1934.

This study, including a series of 254 cases of neonatal deaths, was an effort to ascertain some of the factors that influence this mortality, yet complete and accurate diagnosis was not always possible because in dealing with young infants the difficulties of clinical examination are so great as to make the diagnosis often a matter of conjecture.

At no time of life is the diagnosis so difficult and the records so unreliable in giving the exact causes of death as during this early period. It is by a realization of the peculiar features of the neonatal period that we may hope to combat their dangers.

All infants studied in this series died within the neonatal period. Twenty-eight weeks of gestation have been accepted as the period of viability and any infants born alive before this period and subsequently dying have been excluded. All cases in which the infant breathed after delivery, even though the respirations were feeble, were included. An attempt was made to list as accurately as possible the primary cause of death in each case. Because of the frequency of complications the cause of death was sometimes perplexing and in such cases the sequence of events in the items as obtained from the hospital records were utilized. All deaths occurred before the babies were discharged from the hospital.

In the five-year period, 1929 to 1934, there were in the combined hospitals 5,481 live births and 254 neonatal deaths or 4.6 per cent of the infants born alive. The number of deaths occurring during the first day were 153 or sixty-two per cent. There were 223 deaths during the first week or eighty-seven per cent, in the second week there were fourteen deaths or 0.5 per cent. Seventeen infants died during the third and fourth weeks or 0.6 per cent.

Table One shows the causes of death during the first month in the order of their frequency.

TABLE ONE

Causes of Death	Un- der 1 Day	Un- der 7 Days	8 to 14 Days	14 to 30 Days	Total
Prematurity	115	37	7	7	166
Birth Injury	20	22	1	2	45
Congenital Deformities	9	1	2	0	12
Congenital Heart Lesion	0	2	1	0	3
Enlarged Thymus	3	2	0	0	5
Infections	0	0	2	2	4
Lues	1	2	1	2	6
Pneumonia	0	1	0	4	5
Asphyxia	3	1	0	0	4
Unknown	2	1	0	0	3
Icterus Gravis	0	1	0	0	1
Total	153	70	14	17	254

*Group One*

Cases where death was due to prematurity.

One hundred and sixty-six or 65.3 per cent of the total deaths occurred in infants born prematurely. Eighty-eight or 34.7 per cent occurred in infants born at term. Prematurity, therefore, is the largest single factor in infant mortality of this period.

Infants have been classified as premature if they were born after the twenty-seventh week of gestation and before term, and weighed less than five pounds.

The cause of premature birth in many cases was not recorded, but certain factors were obtainable from the records. The age of the mother, number of pregnancies, and condition of the baby were usually noted.

In ten instances the mother was under fifteen years of age. One mother was eleven years old. The average was between nineteen and thirty years. The age of the mother had very little influence on the cause of prematurity. In one hundred and forty cases the mother was a multipara; twenty-six were primipara. No doubt, multiparity

is a definite factor in the cause of premature birth.

The baby's condition was recorded good in only ten per cent of this group, fair in twenty-four per cent and poor in sixty-six per cent.

Labor was spontaneous in 155 cases and operative in eleven cases. Of the 166 cases, fifty-six mothers had toxemia, eight had placenta previa, six were luetic, three were tuberculous, and there were five twin deliveries. It was in this group particularly that certain maternal factors were significant.

Therefore, a certain proportion of prematurity can be prevented by adequate prenatal care of toxemia, syphilis, tuberculosis, etc.

*Group Two*

Cases where death was due to birth injury.

Deaths due to injury at birth were divided into subgroups, depending on whether the infant was born at term or prematurely.

Accidents of labor were responsible for forty-five deaths in full-term infants. Of the forty-five full-term infants, eighteen were breech deliveries; forceps were used in fourteen cases. Of the fifteen premature infants with secondary cerebral hemorrhage, all were normal deliveries. Thirty-one of the total were autopsied.

The age at death varied from one to twenty-one days, but most of the infants survived for a few days only, the average being three days. Forty-four per cent died the first day of life. Forty-eight per cent died during the first seven days.

The most frequently mentioned causes of these accidents were: difficult delivery, malpresentations and prolonged labor.

In the 254 deaths, therefore, accidents of labor caused forty-five or seventeen per cent.

*Group Three*

Cases where death was due to developmental defects.

Of the twenty deaths from this cause, five were recorded as enlarged thymus, three were cardiac malformations, six intestinal malformations, and five were of the nervous system, and one multiple de-



formity. The age at death varied from a few hours to six days.

#### *Group Four*

Cases where death was due to infection.

*Congenital Syphilis*—Lues was the cause of death in six full-term infants and a secondary cause in six premature infants. One infant died on the first day, two under seven days, and three after fourteen days. The premature infants with lues all died in the first day except one who died on the sixth day.

A diagnosis of lues was verified by a Wassermann on the mother and cord, history of premature births and macerated stillbirths.

*Pneumonia*—Pneumonia was the cause of death in five full-term infants, one occurring under seven days, four occurring between the fourteenth and thirtieth day. Pneumonia was a secondary of death in seven prematures, two on the first day, two on the second day, one on the fourth and fifth day each, one on the fourteenth, and one on the twenty-third day.

One colon bacillus meningitis died on the twenty-second day. One otitis media with meningitis died on the fourteenth day. Two infantile diarrhea cases died on the sixteenth and twentieth day.

#### *Group Five*

Cases where death was due to asphyxia.

Asphyxia was the cause of death in four full-term infants or 0.16 per cent of all deaths. These deaths all occurred under seven days. The cause of asphyxia was: cord around neck, prolapsed cord, knot in cord, one placenta previa. All but one had normal delivery, one was a forceps delivery.

Of the remaining deaths three were classified as unknown and died under seven days.

One infant died from icterus gravis presumably, since this was the only significant post-mortem finding.

#### SUMMARY

The deaths in the neonatal period were 254 or, 4.6 per cent of the live births.

One hundred and fifty-three or 62 per

cent of the total deaths occurred on the first day, 223 or 87 per cent occurred in the first week, fourteen or 0.5 per cent in the second week, and seventeen or 0.6 per cent in the third and fourth weeks.

Prematurity was responsible for 166 deaths, or 65.3 per cent of the total deaths. One hundred and fifteen or 69 per cent occurred on the first day. One hundred and fifty-two or 91 per cent occurred during the first week. Seven deaths or 0.4 per cent occurred in the second week. In the third and fourth weeks seven or 0.4 per cent deaths occurred.

Prematurity was the most important factor influencing neonatal mortality.

Prematurity is often due to maternal disease such as toxemia of pregnancy, nephritis, syphilis, acute illness, heart disease and placenta previa. In a large proportion of the cases, however, no cause for the premature labor was found.

A very large number of deaths during the neonatal period occur in the first few days of life, and their cause is to be sought in relation to the causes of stillbirths rather than in the postnatal period.

Birth trauma was the cause of death primarily in forty-five cases, or 17 per cent of the total deaths. Twenty deaths or 44 per cent occurred on the first day, twenty-two or 48 per cent occurred in the first week, three deaths or 8 per cent occurred between the second and fourth weeks. It was a secondary cause in fifteen premature infants.

Malformations or congenital deformities were the cause of death in twenty cases, or 7.8 per cent of the total. Seventeen deaths occurred in the first week of life and three in the second week.

Congenital syphilis was the cause of death in six full term infants, or 0.2 per cent of the total. Three infants died in the first week and three in the second. It was a secondary cause of death in six premature infants. Congenital lues is not a common cause of death in the neonatal period; the infants of syphilitic mothers are often born prematurely.

Pneumonia was the primary cause of death in five infants, or 0.2 per cent of the

total. One death occurred in the first week, four between the second and fourth weeks. It was a secondary cause of death in seven premature infants.

Infections other than lues and pneumonia were the cause of four deaths, or 0.15 per cent of the total deaths. All deaths occurred between the fourteenth and twenty-second days.

Asphyxia was the cause of death in four cases, or 0.15 per cent of the total deaths. Three deaths occurred on the first day and one on the second.

There were three deaths from unknown causes, all occurring on the second day of life.

One infant died from icterus gravis during the first week.

### CONCLUSIONS

The neonatal death rate still remains a grave reproach to our methods of treatment before, during and after birth, and demands the serious attention of both the obstetrician and pediatrician.

Prematurity was the most important factor influencing the neonatal mortality. Maternal disease was responsible for a certain proportion but in the majority of cases no cause was found.

The complications of labor with the trauma so often associated therewith were shown to be of paramount importance in the cause of neonatal mortality.

Congenital deformities and malformations are responsible for a certain number of neonatal deaths that are inevitable.

Asphyxia and infections including lues were minor factors in the cause of neonatal mortality in this series.

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# INTRAOCULAR FOREIGN BODIES\*

E. C. ELLETT, M.D., and R. O. RYCHENER, M.D., Memphis

THIS is a report of 48 cases of foreign body in the eyeball, of which I am able to present a fairly accurate account. They represent only the cases of which I was able to find the specimens, so that it does not present a complete record of my experience since in some cases the foreign body was not removed, in some it was removed but lost, in others the patient claimed it as a souvenir. The largest number of cases of foreign body in my experience have been from shot injuries, but I have included none of them in this series, having reported on most of those in another paper. The majority of cases included in this report are the ordinary penetrating injuries with small scales of steel from tools, that is the common type of magnetic foreign body, amenable to magnet extractions. There are a few nonmagnetic foreign bodies in the list, consisting of brass, copper, glass, and hard rubber, but none, as already stated, of lead (shot). Most of the patients showed a foreign body in the vitreous, a few being in the iris or lens. I think there is no case in this series of through and through injury, though there were two in which the foreign body was extraocular. The shot cases, to which I have referred, are usually through and through.

The statistical part of the paper is as follows:

Total number of cases.....	48
Eye was removed in.....	16
Eye was lost (removed or vision less than 20/200) (73%).....	35
Vision 20, 200-20/40 .....	5
Vision 20, 40-20/20 .....	6
Vision was not ascertained.....	2
The foreign body was extracted by magnet in .....	33
By anterior route.....	12
By posterior route.....	21
Nonmagnetic bodies .....	6
Removed .....	3
Foreign body not removed in.....	6
[In all cases in which the foreign body was not removed the eye was lost.]	

There were removed by the <i>anterior route</i> .....	12
Of these the eye was lost, or the final vision was less than 20/200.....	7
Vision better than 20/200.....	4
Vision not ascertained in.....	1
There were removed by the <i>posterior route</i> .....	21
Of these the eye was lost, or vision less than 20/200 .....	15
Vision better than 20/200.....	5
Vision not ascertained in.....	1

The time that elapsed between the injury and the examination varied from three hours to 20 years. The latter case will be reported as the foreign body was removed and vision preserved. In cases seen 10 and 15 years after the injury, the eye was blind and was removed.

## DIAGNOSIS

The diagnosis is easy as a rule. The history, the visual disturbance, the presence of a wound of entrance, the ophthalmoscopic evidence of intraocular injury and the occasional possibility of seeing the foreign body in the eye, especially if it lodges in the lens or iris, are important signs. The X-ray is most valuable and should never be neglected. The methods of localization are the concern of the radiologist, but every competent man has some satisfactory means of localization. Twice I have been misinformed by the radiologist, in that a foreign body was reported as in the eye when it was outside, and in one case the misguided efforts to remove the foreign body apparently contributed to the loss of the eye. In one case the body was reported to be outside of the ball when it was inside.

## TREATMENT

The treatment consists in removal of the foreign body. If this is nonmagnetic, the proposition is very doubtful. The body must be seen and grasped with forceps. In the case of a substance opaque to the X-ray the fluoroscope may help, and has been successfully used in the case of shot, by Dr. George Cross of Chester, Pa. My own experience with removal of nonmagnetic

\*Read before the Tennessee State Medical Association, Chattanooga, April 10, 11, 12, 1934.

bodies is limited to bodies in the anterior chamber. In one case a shot could be seen in the vitreous, but I was unable to remove it.

In case of magnetic foreign bodies, the task is simpler. Many magnets have been devised, from the powerful Haab and Volkmann types to smaller hand magnets. The best, in my experience, are the Lancaster magnets, the more powerful ones being sufficient for the extraction by the anterior route. The question is always debated as to whether the anterior or posterior route should be employed. In this small series the anterior route was employed 12 times with the loss of 7 eyes; the posterior route 21 times with the loss of 15 eyes; so my figures do not help solve the question. I think the anterior route should be attempted unless the foreign body is very large. If it fails, the posterior route should be followed. The method employed is as follows:

#### THE ANTERIOR ROUTE

If a foreign body is localized by the X-ray, or suspected in the absence of an X-ray, the patient is given a hypodermic of morphine and hyoscin and the eye anesthetized and prepared in the usual manner for an intraocular operation. With the patient lying prone and the lids separated by a nonmagnetic speculum, the tip of the most powerful available magnet is approached to the center of the cornea. The foreign body may be drawn forward, passing around the lens and through the pupil into the anterior chamber, where it can be seen. If this does not happen, the application of the magnet may cause pain, which is considered evidence of the presence of a magnetic foreign body in the eye. If no pain is felt, or if no foreign body appears in the anterior chamber or behind the iris, the magnet tip should be moved across the cornea and up and down and the current should be repeatedly made and broken, which movement will often dislodge a foreign body that otherwise will not respond.

If the foreign body is drawn into view, the large magnet should be laid aside and a keratome incision made in the clear cornea on the opposite side of the eye from where the foreign body appears. The tip of a smaller magnet, or at least of a magnet sufficiently small to be easily handled, should

then be approached to the corneal wound, and the foreign body can generally be removed with a little manipulation. If the foreign body is entangled in the iris, an iridectomy may be necessary.

Sometimes the wound of entrance is sufficiently large and so placed that it can be utilized for the extraction. More often the small wound is either unfavorably situated, or is too small, or has closed, so that it cannot be utilized.

If the foreign body cannot be brought into view in this manner, or if no pain follows repeated applications of the magnet, the case is not a suitable one for the anterior route and the posterior route must be used. Operation by the posterior route is performed by reflecting the conjunctiva from the sclera in that quadrant of the eye where the X-ray indicates the body is located. The sclera is penetrated by a quick thrust of a sharp cataract knife, the incision being perpendicular to the margin of the cornea and at least 10 mm. from it, to avoid wounding the ciliary body. The incision is prolonged backward so it is at least 5 mm. long, or longer if the body is larger than 5 mm. in diameter. The eye is fixed with nonmagnetic forceps, the edges of the conjunctival wound are drawn apart, by a stitch placed in each lip, and the magnet tip applied to the wound in the sclera. If the foreign body is not withdrawn, it is necessary to enter the vitreous chamber with a slender tip, carried in the direction in which the foreign body is supposed to lie. The tip is withdrawn, and if the foreign body is not removed, repeated insertions of the magnet tip must be made.

If the foreign body cannot be removed, it is best to remove the eye.

Failure to remove the foreign body may result from several reasons. It is taken for granted that the magnet is sufficiently powerful and is functioning properly.

1. The foreign body may be nonmagnetic.
2. The foreign body may have been in the eye long enough to be surrounded by organized tissue, from which it may be impossible to pull it.
3. The body may be of such size and shape that it cannot be withdrawn from the eye safely. It may also be too small for the magnet to attract except by contact, though imponderable bodies have been removed.



The larger the body, the more powerful the pull of the magnet, and vice versa.

4. In some cases there is no good reason apparent for the failure.

5. An inaccurate X-ray may be the cause of a failure.

If a fragment of oxidizable metal remains in the eye for a time the tissues of the eye become stained by it. This condition, known as siderosis, is very serious, though of prime diagnostic importance. It is often accompanied by a rise of tension, and very often the removal of the foreign body is followed by further loss of vision.

The main lesson that is to be learned from my experience with these cases is that an intraocular foreign body is a very serious matter. About 75 per cent of the eyes so injured are lost, and the recovery with useful vision is exceptional. The probability of the loss of the eye is much greater if the foreign body is not removed.

This small series of cases is not enough on which to base any very definite conclusions. Other much more extensive studies have been reported in recent months, one by Stieren of Pittsburgh, based on the very extensive experience of more than 700 cases seen by him from the steel works of that city, and 290 cases reported by Duggan from the records of the Knapp Memorial Hospital in New York. The latter report seems to be unfavorable to removal by the posterior route, because it is said to favor retinal detachment of vitreous exudate, while Stieren's larger experience makes him very partial to the posterior route as compared to the anterior. In general, opinion seems to be divided, but Stieren lays stress on the fact that removal by the posterior route is best and most safely accomplished if the body can be withdrawn without putting the magnet point into the vitreous chamber; that is, by applying it to the edges of the wound.

A simple classification of results is difficult, too, because the longer the cases are observed, the greater is the number of bad results, which is also affected by the size of the body and its location in the eye. Foreign bodies in the lens and iris offer a better prospect for useful vision. Siderosis adds much to the gravity of the case, as do other factors. To summarize as briefly as possible, in the 290 cases in Duggan's re-

port, the body was not removed in 42. Of these, 24 eyes were removed, 6 more lost useful vision, 9 had vision of 20/40 to 20/200, and 3 vision better than 20/40. The body was removed in 228 cases, of which 109 had no useful vision, 28 had vision 20/200 to 20/40, and 71 better than 20/40. In Stieren's cases, 5 per cent had 20/20 vision; 48 per cent from 20/30 to 20/200; 32 per cent lost useful vision, and 15 per cent were enucleated. In the 1,000 cases covered by the two reports, about one-half lost useful vision. Even if the percentage of loss is higher, as in my own small series, it is worth while to try to remove the foreign body, with the feeling that no useful vision may result; or if it does, it is more than likely to deteriorate as time goes on. A few of the cases are reported as presenting features of special interest.

Mrs. L., age then about 30, was seen in April, 1901, the right eye having been injured the day before by a particle that flew from the head of a tack hammer. The vision was 20/40, there was a small wound near the center of the cornea, a line of opacity in the lens, and what appeared to be a foreign body could be seen on the retina below the disk. Under ether, a flap of conjunctiva was turned back, down and in, the sclera was incised, and a magnet tip introduced into the vitreous. The foreign body was removed on the third attempt. The eye healed without any reaction and a month later the vision was 20/20. A year and a half later this vision was maintained, and I did not see her again for nearly twenty years, at which time there was a slight increase in the lens opacity to the nasal side, vision 20/40. Eight years later, namely, in 1929, the vision was reduced to moving objects due to the presence of a mature cataract. About March 1 of this year, she developed iritis in this eye, from which she has about recovered. In addition to the signs of iritis the tension was normal, and the capsule seems to contain some opaque lens matter and a clear fluid. A good-sized opening can be seen in the posterior capsule and there are some vitreous opacities. There is a good reflex, but no fundus details can be made out. Vision, moving objects.

C. B. H., age 44, was seen in July, 1932, with a history of the right eye being struck five months before with something that

flew from a hammer. The vision had failed and an X-ray was made, which was positive, but nothing was done. The tissues were stained brown, evidently from rust (siderosis), and the X-ray was positive, but the body was reported outside the eye. On account of the staining of the tissues the body was thought to be in the ball, and a large magnet applied to the cornea drew the body into the anterior chamber, when it was removed through a corneal incision on July 9th. It measured  $2 \times 1 \times \frac{1}{2}$  mm. A cataract, with rise of tension to 52, followed, and the cataract was removed August 1. In November, vision was 3/200, and has never improved. The eye ground can be fairly well seen and shows a scar to the nasal side of the disk where the foreign body rested. The tension is normal and it is not apparent why the vision is so poor.

H. M., age 21, was struck by a chip of metal in the right eye in October, 1933, and seen six weeks later. An X-ray had been taken and a foreign body seen to be present, but no localization was made and the body was thought to be outside the ball, though to me it looked like it was inside. The vision was lost, the eye inflamed and tension reduced. A second X-ray was positive and an attempt was made to remove the body through a scleral incision over the body. It was easily located and pulled on with a magnet and then with forceps, but could not be moved. The eye was removed. The body was a large scale about  $8 \times 10$  mm.

J. C., age 15, was struck in the left eye by a bit of glass in January, 1928. A traumatic cataract had formed, but no foreign body was seen. Vision, moving objects. The cataract was removed, but no foreign body was seen. A year later a small piece of glass appeared on the iris below and was removed through a corneal incision. Vision was not restored.

E. R. C., age 48, was seen in January, 1929, giving a history of the loss of the right eye 20 years before from a penetrating injury. About the same time, the left eye was injured by a piece of steel which was said to have been removed, and the eye gave no further trouble till about three months before I saw him, when it became inflamed. The X-ray showed a foreign body, and a dark spot could be seen on the iris at its outer part. An incision was

made over this spot and a piece of steel withdrawn with a magnet. Five years later the eye was quiet and vision normal with glasses.

M. S., age 28, was hit in the left eye September 6, 1926, by a particle from a hammer, and was seen four days later. The eye was blind and the iris had prolapsed through a wound at the corneoscleral junction. The X-ray located a foreign body outside the ball to the temporal side. The eye degenerated, and was removed one month later on account of continued inflammation, with softening of the eye. The foreign body was found in the eyeball.

G. A., age 52, was hit in the right eye by a piece of a nail in June, 1930, and was not seen until December of that year. There was a small corneal scar above and a yellowish white plug of material was seen at the edge of the pupil, lying partly on the iris and partly on the lens. The vision was 20/100, and as the eye gave no trouble he did not want anything done to it. In June, 1931, the iris was greenish brown, and there was a fine brown deposit on the posterior surface of the cornea; that is, the eye was stained by rust (siderosis). The X-ray was positive at this time, and through a corneal incision the foreign body was removed with a magnet, an iridectomy being done. A cataract developed, and was removed in September, with a vision of 20/40. In May, 1932, vision fell to perception of light. When last seen, in August, 1932, the vision had not improved, though the eye was quiet and the eye ground could be seen. There was nothing to adequately explain the loss of vision.

J. H., age 38, was struck in the right eye by a chip of steel two weeks before he was seen in September, 1923. The X-ray was positive, and three unsuccessful attempts to remove the body were made before I saw him in September. The X-ray being still positive, the large magnet was applied to the cornea, causing pain. The sclera was incised over the location of the body and the body removed at the first attempt. The previous efforts had been made in the wrong place. When last seen, in January, 1926, the lens was partly opaque and the eye seemed to be blind, though the pupil was active. The blindness was partly feigned, though the vision was doubtless impaired.



L. A., age 5, was hit with a chip while hitting a rock with a hammer. There was a small corneal wound, a wound of the lens, tension normal, vision 20/25, X-ray positive. A magnet to the cornea gave no response, and it was thought the body might be rock and nonmagnetic. A scleral incision was made and a particle of steel removed at the first application of the magnet. It was a scale  $1\frac{1}{2}$  mm. in diameter. The child was seen ten days later with a traumatic cataract and has not been heard of since.

#### DISCUSSION

DR. ROBERT SULLIVAN (Nashville): Mr. President and Gentlemen: I am very sorry I did not have an opportunity to see this paper before Dr. Rychener's presentation; also not to have heard all of it. I was in the House of Delegates and I missed the first of the paper.

I believe that the general session, as a rule, would be better off if some general eye paper or some general otolaryngological paper were brought before it, for this reason: All of you see an occasional eye injury that you regard as rather minor, and that we regard as rather minor frequently, with a history of something striking in the eye. We inspect the eye and perhaps see a tiny abrasion. We naturally feel that there is a foreign body in the cornea or the sclera, the foreign body has been washed out and that is all there is to it. Unless we make a rather careful examination we are apt to overlook a penetrating foreign body of the eye.

First, intraocular foreign bodies are frequently overlooked, for the reason I just mentioned. You get a history of some minor injury, at least you think it is rather minor, and you pass it up, but you should be on your guard always for fear it is a penetrating intraocular injury.

Every corneal or scleral wound must be regarded with suspicion until one is certain that there is not a penetrating injury. The foreign substance may be very small. I had a case a few years ago in which the foreign substance was so small that it was overlooked for one year. The man lived in Detroit and was working for the Dodge Motor Car Company. He came to Nashville to study medicine. He noticed after a year's time that his vision was gradually diminishing. An X-ray examination was made and an intraocular foreign body was found which was later removed with a magnet. Of course, the man had a traumatic cataract, but it was almost a year before he noticed any impairment of vision, because the intraocular body was lodged in the capsule for a long time before it created any disturbance.

After that we had another case that was rather unusual. A man was seen by a general surgeon who was doing some traumatic eye work and thought it was purely a corneal abrasion and told him the eye would be all right. Several months after that he came into the office with a history of impairment of vision for the past month. The interesting part of this is that an X-ray examina-

tion did not reveal a foreign body, but a foreign body was removed with a magnet—a very minute foreign body. Fortunately we had witnesses of the fact, our late Dr. Wood happened to be a witness. This was an insurance case, and the interesting part of it was that the insurance people refused to pay this man for the loss of his eye and refused to pay my bill because of the fact that the X-ray examination did not reveal an intraocular foreign body. It was a very small foreign body, and in the examination of the X-ray plate there were certain little defects so that one would be apt to overlook it.

The important factor in every case is how much vision is retained and how long it is retained. We frequently remove an intraocular foreign body, and the next two or three weeks we think we have almost normal vision at 20/50 or 20/100, and we feel that is perfectly all right, we have gotten by; but the question is, how long will useful vision or any vision be retained? I think that six months or a year or maybe longer will decide that factor. You know very well that so many of us feel that we have been most fortunate if we have gotten by with a beautiful result, yet six months or a year afterward we will get an iridocyclitis and all useful vision is gone. It is a question in all intraocular foreign bodies of how much useful vision you have and how long you will have useful vision. It is nothing to boast at all that you removed an intraocular foreign body and the patient can count fingers or have perception of light six months after that, any more than if the general surgeon removed a cancer and six months after the removal of the cancer the patient still lives. They are hardly comparable cases, and yet in a way they are. What we would like would be normal vision years after, which we can't always have.

In looking over the records of the hospital and your reports, I think your reports are about the average, except for the reports in Pittsburgh, where I believe they felt they had fifty per cent of cases with normal vision. That is not true throughout this country or any other country; I think twenty per cent is a fair average. That certainly has been our average in Nashville, and we are very happy to get twenty or twenty-five per cent.

As to X-ray, I am not unmindful of the value of it. I think an X-ray should be made in every case. It is occasionally misleading, and I think that is more apt to be true as to localization. I know they can't always localize a foreign body absolutely accurately, but I think it is certainly a help to use it if they can locate the foreign body accurately. I think it is rather hazardous for any oculist to attempt to remove that foreign body until he has made a careful study with the X-ray, not because of the fact that he finds there is a foreign body present, but because he can make a careful examination as to its location and position.

As to the route, I believe that depends on the surgeon. There are certain things that you feel you can do better certain ways; that is also true in eye work. I personally prefer the anterior route unless the foreign body is back of the lens. I used

to feel I could remove them all by the anterior route, but I know I damaged some eyes this way. I think the route depends a lot on the operator; it depends a whole lot on the position of the foreign body and many other factors.

I want to thank Dr. Rychener for bringing this paper before the session.

DR. STEWART LAWWILL (Chattanooga): Mr. Chairman and Gentlemen: We have had a very excellent paper here. I had the pleasure of hearing Dr. Ellett on a similar subject yesterday and enjoyed it very much indeed. The paper and the discussion have already covered the subject pretty thoroughly. There are a few points, however, that I should like to stress rather than to bring out something new.

First, Dr. Sullivan has stated that a negative X-ray may mislead you. That is more often true than we think. So many times a man will come in with a history of having been hammering on a rock and he got something in his eye. Nearly every time it is a piece of the hammer, but it may be a piece of the rock. We all know that rock is not opaque to X-ray light and we will get a negative X-ray picture when there may be a foreign body within the eye. The same thing may hold true when you have slivers from very tiny pieces of metal. I have had one or two cases where I got a negative X-ray report where there was a very small cut through the cornea and through the lens, and we knew it could not have been done by a piercing object that was withdrawn, and yet the X-ray came back saying there was nothing there; still you could see distinctly a wound through the cornea and through the lens. One should not depend entirely upon an X-ray in stating whether or not there is a foreign body within the eye.

The method of removal, of course, is either anterior or posterior, and with those magnetic substances you can't say definitely that you can get out one hundred per cent of the substance from the eye; it cannot be done, particularly where those pieces of magnetic substance have remained in for any length of time and may have become covered over with fibrous tissue and anchored thoroughly, either in the ciliary body or in the choroid or some place where it is impossible to drag them out without tearing out the entire contents of the eye.

Wherever a foreign body is found or is known to be within the eye and is not extracted, I would say that almost one hundred per cent the eye itself should be removed if the other eye is present, because of the danger of sympathetic ophthalmia.

Successful removal of a foreign body, of course, is not always followed by good vision. There may be damage done at the time, or there may be no damage done at the time of removal to the visual tract, and yet you may have a detached retina, or from chemical reactions, from the little rust within the eye, you may lose that eye later.

In these medico-legal cases, as Dr. Sullivan has brought out, following removal or following any intraocular injury of an eye, we should be very

slow to state how much permanent damage is done to that eye. It may be months before cataractous changes or some other degenerative changes that take place within the eye that cause loss of vision appear, and it is not fair to the employee if he has, a month or six weeks after an injury and after his operation, a fair vision in that eye, to have him so rated and to have him settle with his insurance company at that time; it is not fair because six or eight months later he may have a blind eye and should recover his hundred weeks which are allowed by the state compensation law.

It is often surprising how a bad looking eye that we offer no hope for whatever at the time of injury will recover. I have in mind one case in which a little child had a piece of torpedo thrown down at her feet and a piece of the rock flew up and struck her in the eye and cut the globe across the cornea leaving the vitreous sticking out, and it looked like a hopeless case. I cut loose the conjunctiva, pulled over that, closed up the wound, and surprising as it may seem, that child recovered a 20/40 vision, but she had a traumatic extraction of her lens.

DR. R. O. RYCHENER (closing): I wish to thank the gentlemen for their generous discussion, and to say that I regret the emergency that arose that made it necessary for me to present this paper instead of Dr. Ellett, because I realize how much more interestingly he could have done so. I just want to emphasize a few little things that perhaps were not brought out in very much detail. One is that the X-ray man can help himself considerably in telling us whether or not a foreign body reposes in the eye by the very simple procedure of taking his X-ray of the eye with a double exposure. That is, by taking his primary picture with the eye in the position in which he wishes it to be, and then without moving the patient's head or any of the other apparatus, or without moving his film, simply have the patient look up or down as far as he can and then take a second exposure on the same film. Then if we have a small foreign body present we will see the same foreign body in two different positions. That is a very helpful point.

Another is that oftentimes foreign bodies that are nonmagnetic will give us positive X-ray findings; such things as newer types of glass which contain a rather high content of lead will be positive to X-ray, and it is interesting to note that occasionally coal will give such findings. I have a case of that sort of my own in which I had to remove the eye because of a long neglected injury. The patient happened to be a fireman on a railway engine and had gotten some kind of injury while at work. He had no idea what had happened to him, but was conscious of something having struck his eye. Some months afterward the eye gradually deteriorated and a year later he came in for removal because it was hurting him. We took an X-ray of it before we enucleated just for curiosity's sake, and found that there was a foreign body in it. On sectioning the eye after removing it, I found a small piece of coal imbedded in the ciliary processes.



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H. H. SHOULDERS, M.D., Editor and Secretary

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### EDITORIAL

#### THE RECENT MEETING OF THE AMERICAN MEDICAL ASSOCIATION

The members of this Association who subscribe for the Journal of the American Medical Association should preserve Nos. 25 and 26 of Volume 102, which are the issues of June 23 and June 30, 1934.

On page 2109, a brief story of what happened in the House of Delegates is begun. It is concluded on page 2207.

Every member of the Association should read this account of what happened in the House. The discussions which took place on the floor are not included.

The action on most all matters presented was almost unanimous. The address of the president, Dr. Dean Lewis, was exceptionally good, and is reproduced because every doctor should read it. It would not hurt to read it twice. Several resolutions are reproduced; also the ten points which were adopted as suggestions to be followed by all constituent bodies as bases for the conduct of any "social experiments that may be contemplated by them."

The address of Dr. Lewis was as follows:

Mr. Speaker and Members of the House of Delegates: It seems almost needless, perhaps rather presumptuous, on my part to express my appreciation of the honor that you conferred on me two years ago when you made me President-elect of the American Medical Association in New Orleans. One must accept such an honor with humility, for one must realize that one cannot discharge efficiently the duties that one assumes and must be called on frequently to make decisions that will not be approved.

During these two years the educational

opportunity has been great, for I have had the privilege of attending many national, state and county gatherings. I have never had greater pride in the medical fraternity, for they have gladly assumed the responsibilities which they have been forced to meet during the depression. They have assumed these without complaint, and it is without any attempt at patronizing to say that I have known of no organization, either lay or professional, that has rendered such service without complaint. The health of the people has been maintained at a high level. Whether or not the profession is to be given entire credit for this may be a matter of dispute, for it seems that the wind is always tempered with the shorn lamb, for statistics which have been gathered for a number of years have shown that the mortality and morbidity during periods of depression are always low. Social workers apparently are not fully conversant with these facts, for there is a tendency on their part to credit this state of health to their unrelenting, untiring and self-sacrificing efforts to ameliorate suffering and prolong life, little realizing that Providence works in strange and wondrous ways.

These are changing times, however, and the medical profession has been accused from time to time of not keeping up with the social and economic advances. Our severest critics seem to fail to realize that at any and all times the medical profession has always been the vanguard of the troops which seek to prevent the development of disease and to care for it when it has once developed. The medical profession has no apologies or excuses to make, for cities could not have survived epidemics, international trade routes could not have been established, and the span of life would not have been long enough to justify the pangs of labor. It is sometimes a wonder to me why contraceptive measures were not discussed and introduced years ago when the span of life was so short that the futility of birth must have been frequently discussed.

During the past year I have visited many societies and I find that the profession is troubled. They should realize that they provide the essential part of the care, and without their untiring effort and sacrificing

service there would be no medicine, for medical knowledge demands the longest and most technical training of any profession. There would be no paths to follow and we would be lost on the unlighted, uncharted path of ignorance.

Society has been urged to place restrictions on medical practice on the solicitations and frequently the demands of the medical profession. The state in this country which has probably the best medical practice act had a wise governor who was sympathetic with the medical profession and had enough wisdom to select a committee of reputable physicians who wrote an act which he accepted without revision or reservation. This act is in strange contrast to that operative in many states, in which the politicians or laymen have tried to determine for a highly technical profession who should be qualified and how, notwithstanding the fact that fads, fanatics, quacks, and cults flourish and propagate their kind in such states.

We should be concerned today with the quality of medical care. Cheap medicine is often the most expensive, and what is called expensive is often the cheapest, for through the quality are attained the objects of medical practice—decrease in mortality, lessening of morbidity, and shortening of the period of disability.

One of the heaviest duties now resting on the medical profession is to raise and maintain the quality. If the quality of medical care is to be high, we must have vision and exercise judgment at the beginning, and when I say beginning, I mean when the student is admitted to the medical school. Character should have a higher assessed value than marks alone. The matriculation fee should not be so high that only the children of the well-to-do can enter; neither should it be so low that all may enter.

The quality of medicine is largely determined during the four years of the medical course, but must be maintained by wise planning afterward. As I have stated before, I believe that there should be more opportunities for doctors who do not specialize. On leaving the medical schools not infrequently these men never have an opportunity to take patients to the hospitals

or to associate with men whom they admired, and they are denied the chance to study gross pathology, which still remains the foundation stone of medicine. The greatest clinicians have had a sound pathologic training, and when they examine and study a case they always have memories of a case which they have seen before. The best diagnoses are made on correlated clinical and pathological observations. To furnish the material with diagnosis, verified by operation or autopsy, is one of the hardest tasks in maintaining the quality of medical care and to the solution of which we should give most serious attention.

A relatively small percentage of doctors attend medical meetings. In order to keep these doctors abreast of the newer ideas, graduate courses of instruction should be given. I was in Idaho last September, and the members of the state medical society requested that some of the scientific assembly be sent to them, or that doctors be sent from the central office to instruct them in the latest diagnostic procedures. Such attempts to give courses have been undertaken by a large number of medical societies, and I have been particularly impressed by the plan of the Medical Society of the State of Pennsylvania, which has been supported so enthusiastically and successfully by its president, Dr. Guthrie. I believe that in the not too distant future a study of the possibilities of such graduate instruction should be undertaken by a committee of this House, or by the Council on Medical Education and Hospitals, which already has about all the problems that it can successfully handle.

We must preserve the idea that medicine is a profession and not a business, if we are to maintain quality. We must all concede that any one practicing medicine should be able to make a living, and I am sorry to say that not infrequently the higher the ideal and the squarer the methods, the less the living.

The medical profession requires the good will and respect of the people. I know of nothing that makes people more suspicious of those engaged in the practice of medicine than the expert witness. Lay people must think that medicine does not even approach



an exact science, when two men of equal distinction in medicine will give diametrically opposite statements to questions that are asked at a trial.

Members of the bar realize the futility of much expert testimony, and I would like to see the bar association approached by a committee appointed by the House of Delegates to see whether some method of procedure could be devised by which the expert witness could be eliminated. A reference board, appointed by some competent authority or commission, would probably be most satisfactory, for it could examine in camera the testimony and the documents and hand down the decision, thus avoiding the amazement concerning the conflicting statements of equally capable men.

If the quality of medicine is to be raised, control of methods that are practiced must be strictly and carefully applied. Hasty publication should be discouraged. Publication should be based on accumulated knowledge.

There are two disturbing factors in medicine. First, many doctors and lay people condone advertising. Lay people should realize that advertising in medicine is pernicious, for advertising may wilfully deceive. Commercialism and advertising are among the most demoralizing things in medicine.

As a result of the depression, doctors have had a bad time financially and they may easily be exploited by lay people, both in hospital and in health insurance. The fate of the people as regards medicine will be determined in the ward, the home, and the research laboratory.

I look with confidence to the members of the House of Delegates for the solution of the many problems that confront the medical profession. Those questions should be settled by the critical analysis of the facts and data presented and not influenced by passion or the emotions which the problems of the sick so often arouse.

We should remember that it is easy to say that the people are not getting sufficient medical care, but how shall it be provided? Those who practice medicine are always being told how to do it, but those who criticize them have usually had no experience

in doing it and couldn't do it at all if called on to do so. We have the right to be proud of our achievements and we can best meet every challenge directed at us by carrying on without fear and with vision.

#### RESOLUTION ON PUBLICITY BY CLINICS, HOSPITALS, SANATORIUMS, AND OTHER SEMIPUBLIC MEDICAL INSTITUTIONS

Dr. Ben R. McClellan, Ohio, presented the following resolution, which was referred to the Judicial Council:

Whereas, There are occasional evidences of advertising, publicity and propaganda by certain large clinics in violation of the proper ethical and professional restrictions placed on individual physicians; therefore be it

Resolved, By the House of Delegates of the American Medical Association at the eighty-fifth annual session in Cleveland, June 11 to 15, 1934, that attention of the county medical societies be called and emphasis again placed on the following declaration of policy and principle incorporated in resolutions adopted by this body in 1924:

1. Publicity by clinics, hospitals, sanatoriums, and other semipublic medical institutions as to quality of work done implies unusual and exceptional ability and efficiency on the part of their professional staffs and therefore is advertising of the medical men concerned. This type of advertising distinctly savors of quackery and is unethical.

2. Publicity by any such institution stating or implying that, by reason of its exceptionally fine equipment and material resources, it is able to, or does, give the public better medical service than similar institutions are able or willing to render, is advertising for purposes of self-aggrandizement. Statements of this type are frequently exaggerated and misleading and are detrimental to the best interests of the public, of the institution concerned, and of true medical progress. Publicity of this kind is unethical.

The above resolution was adopted.

#### RESOLUTION ON FREE CHOICE OF PHYSICIAN

Dr. Arthur J. Bedell, New York, presented the following resolution, which was

referred to the Reference Committee on Legislation and Public Relations:

Whereas, The procedures established by the Federal Compensation Bureau do not allow free choice of physicians, and

Whereas, the physicians as citizens should not be discriminated against in their professional work, be it

Resolved, That the House of Delegates instruct its delegates to the American Medical Association to present this matter and urge the Association to attempt a change of rules of the Federal Compensation Bureau which will allow the injured person free choice of physician.

#### RESOLUTION LIMITING APPROVAL OF INSTITUTION

Dr. Horace Reed, in behalf of the Oklahoma delegation, presented the following resolution, which was referred to the Judicial Council:

Whereas, Definite policies are now in operation and in the process of development in various parts of the country, with the object of attaining the cooperation of hospitals, clinics, medical colleges, and like institutions, in observing the economic and ethical principles enunciated by component local societies in affiliation with the Oklahoma State Medical Association, and

Whereas, As a result of the promulgation of these policies by component units of the Oklahoma State Medical Association, definite "approved lists" of hospitals, clinics, medical colleges, and like institutions, are properly being compiled; therefore, be it

Resolved, That the Oklahoma State Medical Association memorialize the American Medical Association, and instruct its delegates thereto, to request the American Medical Association to adopt policies by which the American Medical Association shall not approve any institution for any purpose unless and until such institution shall be officially in the approved list of the component medical society or societies in the jurisdiction of which such hospital or institution is located or operates. Any institution failing of approval of the society or societies concerned shall have the right of appeal to and hearing before the proper committee of the American Medical Association.

This resolution was not adopted because it was too broad and general, though it does show what its sponsors are thinking.—Ed.

#### AMENDMENTS TO PRINCIPLES OF MEDICAL ETHICS ADOPTED

3. Resolved, That the Principles of Ethics be amended by inserting as section 4 of article VI, chapter II, "It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization, group, or individual, by whatever name called, or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure is beneath the dignity of professional practice, is unfair competition with the profession at large, is harmful alike to the profession of medicine and the welfare of the people, and is against sound public policy."

#### TEN PRINCIPLES TO BE OBSERVED IN THE CONDUCT OF ANY SOCIAL EXPERIMENT

The delegates have in their hands a pamphlet entitled, "Sickness Insurance Problems in the United States," as presented by the Board of Trustees.

Your committee does not recommend any plan, but has abstracted from the pamphlet the following principles, and suggests that they be followed by all constituent bodies of the American Medical Association as bases for the conduct of any social experiments that may be contemplated by them:

"First: All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

"Second: No third party must be permitted to come between the patient and his physician in any medical relations. All responsibility for the character of medical service must be borne by the profession.

"Third: Patients must have absolute freedom to choose a duly qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give service.

"Fourth: The method of giving the serv-



ice must retain a permanent, confidential relation between the patient and a 'family physician.' This relation must be the fundamental and dominating feature of any system.

"Fifth: All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

"Sixth: However the cost of medical service may be distributed, the immediate cost should be borne by the patient if able to pay at the time the service is rendered.

"Seventh: Medical service must have no connection with any cash benefits.

"Eighth: Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established.

"Ninth: Systems for the relief of low income classes should be limited strictly to those below the 'comfort level' standard of incomes.

"Tenth: There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession."

If it is determined in a community that some experiment to change or improve the method of administering medical service is desirable, observance of these principles will remove many of the "disturbing influences" from such an experiment. In all such experiments, attention must be sharply focused on the quality of medical service.

Such restrictions will undoubtedly lower the enthusiasm of many of the present advocates of such schemes. They remove the interest of the politician, the commercial promoter, and all those who consciously or unconsciously are seeking to achieve other objectives than better medical care for

those unable to provide such care for themselves under present conditions. All these principles are directed toward protecting the character of the service to be given and all are directly designed to guard against abuses which experience shows are bound to arise when these principles are neglected. In most communities it will be found that comparatively few changes in the methods of administering medical care will be necessary. That type of medical practice which preserves the personal relationships between physician and patient, that maintains the practice of medicine as a profession, and that has withstood the test of centuries must be preserved for the best interests of both the public and the medical profession.

The report of the committee was adopted section by section and as a whole on motions of Dr. Van Etten, duly seconded and carried, with the substitution of the words "legally qualified doctor of medicine" for the word "physician."

#### COMMENT

These resolutions give a definite indication of what doctors are thinking about.

It is made perfectly evident that scientific progress has exceeded ethical progress, and an effort now is in order to bring ethical progress up to date.

Institutions, it seems, have assumed that the principles of the code of ethics which apply to individuals do not apply to institutions which may be in competition with individuals.

The Judicial Council and the House of Delegates have attempted to give emphasis to the fact that institutions must comply with the same ethical principles which apply to individuals. Certainly this works no hardship and no injustice.

In the success or failure of such a movement rests the future of the practice of medicine as a profession.

#### A DANGER TO CRIPPLED CHILDREN

A crippled child has always incited pity. It is perfectly proper that this is so. The fact that they do incite pity indicates that human individuals, by and large, possess a fair amount of the virtue of charity.

Cripples, as a rule, however, adapt them-

selves to their handicaps. Please get the word—*they adapt themselves to their handicaps, and often, all too often, outstrip their physically perfect fellows.* Probably the most famous pathologist is Dr. James Ewing, who is a cripple.

Some of the most successful men we have ever contacted are cripples. It has seemed that the mental discipline the cripple is compelled to employ in adapting himself to his situation may be largely responsible for his success. The person who has no such handicap exercises no such mental discipline on himself. He undergoes no such process of adaptation.

There is now a possibility that the cripple may be cheated out of this valuable mental discipline. He may also be given an inferiority complex. He may be also kidded into believing he is naturally a ward of the state and should always be such a ward. Certainly we are not opposed to proper charities to those who are entitled to them. We must never fail to recognize also the injuries which charity may do an individual.

For a number of years cripples have been the beneficiaries of organized action. The Shrine adopted crippled children as their project many years ago. They built hospitals throughout the country and staffed them and have been doing a noble work. An organization of young women known as the Junior League have likewise done a noble piece of work.

Recently it seems that other groups have taken up the crippled children movement, not so much as the display of a generous charity toward the handicapped, but as a project by which they could secure employment for the unhandicapped, and probably as a means of obtaining some public plaudits and some money. They have taken up the task of cataloging all the cripples, and they are drawing large salaries for writing the doctors throughout the state a circular letter requesting the doctors to supply them with the names of all cripples they happen to know. The doctor supplies the vital facts without cost, of course, and in many instances the doctor has the cripple under appropriate treatment and no sort of cataloging would be of the slightest use to the

cripple. Anyway, we come to the final show-down in which these lay groups are carrying on their barnstorming activities. The final show-down consists of a final examination of the cripple, and the only examination that is worth a penny to the cripple is an examination made by a doctor, and then instead of taking the cripple to the doctor of his choice and paying the doctor a reasonable fee out of federal funds, if necessary, for his diagnosis and opinion, they proceed to assemble the cripples at points far removed from a doctor's office and then hire a few doctors at a very low rate to make the examinations. All this goes to show that it is high time that many of the so-called humanitarian movements should be debunked, and when they are properly debunked, the objects of their alleged generosity will be better off, and normal corrective channels will operate just as they have operated and should operate without the hindrance and complications of salaried busybodies whose primary object is a salary for themselves.

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#### AN ORGANIZATION OF THE MEDICAL PROFESSION FOR POLITICAL ACTION!

For more than a century the Tennessee State Medical Association has been in existence. It has rendered services, the importance and value of which can in no way be estimated.

The Association as an organization has never entered partisan politics. It is not proposed that it should do so now. There are issues raised, however, which transcend all party lines. The issues that are raised are those which differentiate the ideals and aims of communism from the ideals and aims of a democracy.

The organization of medicine must present a solid front against the importation of those ideals which are bringing tragedies to the countries which have adopted them. It is therefore not only appropriate but very necessary that the Association organize itself for defensive political action.

This step has been taken. A committee has been formed whose duty it is to perfect such an organization throughout the state and to effectively contact candidates for Governor and the Legislature with a view



to determining their attitude on some of these vital issues.

This committee is headed by Dr. John M. Lee as chairman. It has been actively at work. At the present time sixty-eight of the ninety-five counties in the state have such an organization perfected.

There has never been any doubt that doctors when aroused and properly organized can exert some political force. Up to now such an urgent necessity has never existed but at the present time the urgent necessity does exist and doctors are arising to the occasion.

In previous sessions of the Legislature other well organized groups have made fund of the political impotency of doctors. Henceforth we will stand foursquare on well established principles and fight like men to the bitter end.

## DEATHS

Dr. J. H. Karsch, Memphis. Vanderbilt Medical School, 1896. Aged 58. Died suddenly June 14.

Dr. Dan German, Jr., Franklin. Vanderbilt Medical School, 1931. Aged 25. Died July 1, as the result of an automobile accident.

## RESOLUTIONS

With emotions of deepest regret the Committee on Memorials announce to the Society the passing of an esteemed member. On June 14, Dr. Joseph H. Karsch died suddenly and unexpectedly in Baltimore. He was on his way to New York whence he had expected to sail for an extended trip abroad. It was not known to Dr. Karsch's friends that he was in precarious health; and his death, apparently without warning in any way, was a profound shock to his many friends and to his family.

Dr. Karsch was born in Nashville, Tenn., where he obtained his earlier educational advantages, graduating in medicine from Vanderbilt University Medical Department.

He later pursued postgraduate study in Edinburgh. He settled in Memphis, engaging in practice with his uncle, the late Dr. Buddeke. He achieved and enjoyed a liberal clientele which he served with zeal and fidelity. He married Miss Blanche Hamilton and they have one daughter and a son. He was a communicant at St. Peter's Church. His age at death was fifty-eight years. He was Vice President of the Memphis and Shelby County Medical Society during the year 1928.

In the death of Dr. Karsch this Society will miss a genial and friendly personality. His ready smile and warm handclasp were the characteristics which commended him to a large circle of friends. His attainments as a physician were recognized as superior and in his passing a vacancy is created which will not soon be filled.

This Society hereby records its deep sorrow on the untimely death of Dr. Karsch, and extends to his afflicted family its heartfelt sympathy.

B. F. TURNER.

OTIS S. WARR.

W. W. ROBINSON.

On Tuesday, May 29, 1934, the Chattanooga and Hamilton County Medical Society lost one of its most valued members and past presidents in the death of Dr. William Moore Bogart. Born in Sweetwater, Tennessee, February 27, 1867, son of Dr. Franklin Bogart and Elizabeth Gaines Bogart. He was graduated in medicine at Bellevue Hospital Medical College, New York City, 1889, came to Chattanooga in 1891, president of Chattanooga and Hamilton County Medical Society in 1914; also member of the Tennessee Medical Association and fellow of the American Medical Association.

It might be said that here was a man, a good man, that combined his scientific knowledge of medicine with the religion, or religious principles, of the Great Physician to the glory of his profession and his God. Many will testify that he ministered unto them and they were healed. His comforting advice touched with a deep religious fervor comforted them in the dark hours of

distress. No nobler epitaph could be written; he practiced his religion as well as his profession. No medical brother could criticize his professional ethics and all could well emulate his noble application of religion to the practice of medicine.

Be it therefore resolved: That the Chattanooga and Hamilton County Medical Society deeply deplore the passing of Dr. Bogart.

And be it further resolved, That we extend to his bereaved family our sincere sympathy and condolence, and be it further resolved, That a copy of this preamble and these Resolutions be sent to the family of the deceased, a copy spread upon our Record Book and a copy sent the Secretary of the State Medical Society.

Memorial Committee—

D. N. WILLIAMS, *Chm.*  
J. W. BRADLEY.  
J. B. MCGHEE.  
A. F. EBERT.  
L. P. BROOKS.

Approved June 7, 1934.

JAMES L. BIBB, *President.*  
W. J. SHERIDAN, *Secretary.*

## NEWS NOTES AND COMMENTS

Last month we reported the theft of books and instruments from doctors' offices. On June 17, a man was arrested in Whiteville and charged with theft of books and instruments from Dr. Elisha Farrow's office and Dr. Munal's office. The man's system seems to have been to steal anything he could find in one doctor's office and sell it to another doctor in the next town. If you must buy secondhand books and instruments don't purchase them from a stranger.

Moreau le Duc, surgeon-in-attendance to Louis XV, was the first surgeon who ever performed resections of the joints.

When he was called by the king to treat him for a swollen ankle, the king addressed the doctor: "Monsieur, I hope that you will treat me better than you are treating

your poor patients at the hospital." "Sire," answered Moreau le Duc, "This I cannot do, I am sorry." The king, greatly astonished at this unexpected reply, asked rather sharply, "And why not?" "Because I am treating my poor hospital patients like kings!" was the doctor's firm reply.

There has been a special demand for the issues of April and May. If you are not filing all the numbers of the Journal we would appreciate it if you would send us your copy of the above issues.

The following letter was recently received at this office:

Sevierville, Tennessee  
June 29, 1934.

Mr. Stanley McMahan, Administrator,  
Sevier County,  
Sevierville, Tennessee.

Dear Mr. McMahan:

At your request some few days ago I wrote you a letter and advised you that any member of the Sevier County Medical Society was eligible, competent and had the ability to conduct the "Crippled Children's Clinic" in this county and it has been learned since that a doctor was appointed who does not have an M.D. degree and is not eligible to belong to the society, therefore, the Sevier County Medical Society disapproves of this appointment, but insists that a member of this society be appointed, that you would like or suggest but the society agreed that Dr. R. J. Ingle would be a good man for the appointment.

We feel sure that your intentions were good and that you were under the impression that the doctor in question was a member of the society, and furthermore it was learned that you did not receive my letter on time. We presume that you made this appointment or at least the suggestion to have the appointment made. We will appreciate any favor that you may show Dr. Ingle.

Yours very truly,

O. H. YARBERRY, *Pres.*,  
C. P. WILSON, *Sec'y.*,  
*Sevier County Medical Society.*



# LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. J. O. Manier, Nashville.  
 Vice President for East Tennessee—Dr. W. B. Campbell, Cleveland.  
 Vice President for Middle Tennessee—Dr. J. K. Blackburn, Pulaski.  
 Vice President for West Tennessee—Dr. G. H. Berryhill, Jackson.  
 Secretary-Editor—Dr. H. H. Shoulders.  
 Assistant Secretary-Editor—Dr. W. M. Hardy.

## TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.  
 Dr. Ralph Monger, Medical Arts Building, Knoxville.  
 Dr. W. L. Williamson, 915 Madison Avenue, Memphis.  
 Dr. H. B. Everett, 2541 Broad Street, Memphis.  
 Dr. E. R. Zemp, Walnut Street, Knoxville.

## COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.  
 Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. J. H. Revington, Chattanooga.  
 Fourth District—Dr. J. T. Moore, Algood.  
 Fifth District—Dr. John W. Sutton, Petersburg.  
 Sixth District—Dr. L. W. Edwards, Nashville.  
 Seventh District—Dr. C. D. Walton, Mt. Pleasant.  
 Eighth District—Dr. J. R. Thompson, Jackson.  
 Ninth District—Dr. E. H. Baird, Dyersburg.  
 Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.  
 Dr. H. H. Shoulders, Nashville; Middle Tennessee.  
 Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.  
 Dr. M. M. Cullom, Nashville; Middle Tennessee.  
 Dr. E. C. Ellett, Memphis; West Tennessee.

# OFFICERS OF COUNTY MEDICAL SOCIETIES FOR THE YEAR 1934

County	President	Vice President	Secretary-Treasurer
Anderson	J. M. Cox, Coal Creek	Thomas Jennings, Clinton	J. S. Hall, Clinton
Bedford	S. S. Moody, Shelbyville	W. T. Sharp, Farmington	Alfred Farrar, Shelbyville
Blount	E. W. Griffin, Townsend	C. C. Vinsant, Maryville	H. A. Calloway, Maryville
Bradley	E. R. Ferguson, Cleveland	Vance H. Bell, Cleveland	D. N. Arnold, Cleveland
Campbell	R. J. Buckman, Westbourne	S. S. Brown, Jellico	F. A. McClintock, Newcomb
Carroll	O. W. Fesmire, McKenzie	E. W. Hillsman, Trezevant	J. H. Williams, McKenzie
Carter	C. B. Baughman, Elizabethton		E. T. Pearson, Elizabethton
Coke			J. E. Hampton, Newport
Chester, Henderson, and Decatur			Wm. I. Howell, Lexington
Cumberland	E. W. Mitchell, Crossville		V. L. Lewis, Crossville
Davidson	John M. Lee, Nashville	W. G. Kennon, Nashville	N. S. Shofner, Nashville
Dyer, Lake, and Crockett	W. S. Alexander, Ridgely	B. G. Marr, Dyersburg (Dyer) R. E. Hellen, Ridgely, (Lake)	J. Paul Baird, Dyersburg
Fayette, Hardeman			B. F. McAnulty, Bolivar
Fentress	I. R. Storie, Jamestown		J. P. Sloan, Jamestown
Gibson	Featherston Douglas, Dyer	Paul D. Jones	F. L. Roberts, Trenton
Giles	John Morris, Pulaski	Joe B. Wright, Lynnville	T. F. Booth, Pulaski
Greene	C. P. Fox, Greeneville	L. E. Dyer, Greeneville	M. A. Blanton, Mosheim
Grundy	D. H. Bryan, Monteagle	T. F. Taylor, Monteagle	U. B. Bowden, Pelham
Hamblen	D. R. Roach, Morristown		R. A. Purvis, Morristown
Hamilton	Franklin B. Bogart, Chattanooga	James L. Bibb, Chattanooga	Wm. J. Sheridan, Chattanooga
Hardin, Lawrence, Lewis, Perry, and Wayne	J. W. Danley, Lawrenceburg		C. C. Stockard, Lawrenceburg
Haywood	R. T. Keeton, Brownsville	Glenn T. Scott, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Elroy Scruggs, Paris	R. G. Fish, Paris
Hickman	L. F. Prichard, Only	C. V. Stevenson, Centerville	W. K. Edwards, Centerville
Humphreys			W. W. Slayden, Waverly
Jackson	J. D. Quarles, Whitleyville	R. C. Gaw, Gainesboro	F. B. Clark, Gainesboro
Knox	E. A. Guynes, Knoxville	H. T. McClain, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	J. L. Dunavant, Ripley	T. E. Miller, Ripley	J. R. Lewis, Ripley
Lincoln	J. E. Sloan, Boons Hill		J. M. McWilliams, Fayetteville
Loudon			J. Gilbert Eblen, Lenoir City
Macon	D. D. Howser, Lafayette		J. Y. Freeman, Lafayette
Madison	Kelly Smythe, Bemis	Swann Burrus, Jackson	S. M. Herron, Jackson
Maury	Robert Pillow, Jr., Columbia	C. O. Fowler, Springhill	
McMinn	W. R. Arrants, Athens	Watt Keiser, Columbia	C. D. Walton, Mt. Pleasant
McNairy	John R. Smith, Selmer	D. P. Brendle, Englewood	R. W. Epperson, Athens
Monroe		G. B. Curry, Selmer	H. C. Sanders, Selmer
Montgomery			W. J. Cameron, Sweetwater
Obion	W. B. Harrison, Union City	Ilar Glover, Union City	Paul E. Wilson, Clarksville
Overton			Frank Kimzey, Union City
Polk	H. P. Hyde, Copperhill	T. J. Hicks, Copperhill	A. B. Qualls, Livingston
Putnam	J. T. Moore, Algood	T. M. Crane, Monterey	F. O. Geisler, Isabella
Roane	John Roberts, Kingston	F. A. Neergaard, Harriman	Thurman Shipley, Cookeville
Robertson	J. R. Connell, Adams		W. W. Hill, Harriman
Rutherford	W. T. Robison, Murfreesboro	J. D. Hall, Readyville	J. S. Hawkins, Springfield
Scott			J. A. Scott, Murfreesboro
Sevier	O. H. Yarberry, Sevierville	R. J. Ingle, Sevierville	D. M. Woodward, Huntsville
Shelby	W. L. Williamson, Memphis, J. B. Stanford, Memphis, President-Elect	W. L. Rucks, Memphis	C. P. Wilson, Sevierville
Smith	W. B. Dalton, Gordonsville	R. E. Key, Monoville	J. J. Hobson, Memphis, Treasurer;
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White	R. E. Lee Smith, Doyle	E. B. Clark, Sparta	E. J. Huey, Martin
Williamson	H. C. Stewart, Franklin	Dan German, Jr., Franklin	A. F. Richards, Sparta
Wilson	S. B. McFarland, Lebanon	R. L. Witherington, Lebanon	K. S. Howlett, Franklin J. R. Bone, Lebanon

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 A. F. Cooper, Memphis  
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COMMITTEE ON PUBLIC POLICY AND  
LEGISLATION

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 Robert Sullivan, Nashville  
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 Tom R. Barry, Knoxville  
 J. O. Manier, ex officio, Nashville  
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 Franklin Bogart, Chattanooga  
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 Tom Mitchell, Memphis (four years)  
 J. L. Raulston, Knoxville (three years)  
 W. C. Dixon, Chairman, Nashville (two years)  
 W. P. Wood, Knoxville (one year)

STATE TUBERCULOSIS HOSPITAL  
COMMISSION

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Dr. Wm. Milton Adams, formerly associated with Dr. J. Eastman Sheehan, New York City, in the practice of Plastic and Reparative Surgery, announces the opening of offices in the Physicians and Surgeons Building, Suite 410-414, Memphis, Tennessee. Practice limited to Plastic and Reparative Surgery.

The other day two nurses on some alphabetical governmental pay roll called on a doctor. They waited an hour. When they saw the doctor their request was that the doctor do a free tonsillectomy for one of his own patients, provided (of course) some alphabetical governmental organization could find some one to pay for the hospitalization of the patient. Oh, yes, the doctor did it.

## MEDICAL SOCIETIES

*Gibson County:*

Drs. W. C. Alvarez and F. A. Willius, of the Mayo Clinic, will be guest speakers before the Gibson County Medical Society in Trenton at the City Hall on July 30.

*Hamilton County:*

On the first Thursday in August the program of this society will be papers by Drs. E. T. Newell and W. G. Bogart. Dr. Newell's subject will be "Irradiation and Cautery Excision in the Treatment of the Malignancies." Dr. Bogart will discuss "The Past Fifty Years in Medicine."

*Hardin, Lawrence, Lewis, Perry, and Wayne Counties:*

The Five-County Medical Society met June 26, at Waynesboro. The following papers were read:

"Hypertension," by Dr. J. T. Keeton, Clifton. Discussion opened by Dr. O. C. Doty, Savannah.

"Hyperthyroidism," by Dr. N. S. Shofner, Nashville. Discussion opened by Dr. G. N. Springer, Hohenwald.



"Diarrhea in Children," by Dr. Frazier Binns, Nashville. Discussion opened by Dr. R. J. DeFord, Savannah.

"Rat Bite," by Dr. J. V. Hughes, Savannah. Discussion opened by Dr. D. L. Woods, Waynesboro.

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#### *Knox County:*

On June 25, Dr. S. R. Miller's subject was "Fractures in and about the Ankle Joint." Dr. Robert Patterson opened the discussion.

On July 3, all the members of the society were urged to come and "come hungry." The President and Vice President, Drs. Guynes and McClain, supplied a big bunch of eats and Dr. J. L. Bibb, of Chattanooga, furnished a paper, entitled, "Some New Ideas Concerning Cardiovascular Disease."

Speakers for future meetings are announced as follows:

July 10—Dr. Jas. E. Cottrell.

July 17—Dr. A. H. Lancaster.

July 24—Dr. J. J. Greer.

July 31—Dr. R. G. Reaves.

August 7—Dr. Eugene Abercrombie.

August 14—Dr. R. M. Young.

August 21—Dr. W. W. Potter.

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#### *Montgomery County:*

The Montgomery County Medical Society has become noted for the excellent work the society is doing.

On Friday evening, June 22, the society put on a social and a scientific program. The meeting was held at the Dunbar's Cave. A banquet was served at the Idaho Hotel, which the wives of the doctors attended. There was a brief but beautiful program.

The address of welcome to the ladies was delivered by Dr. R. M. Workman, of Clarks-ville, as follows:

"Ladies and Gentlemen:

"On behalf of the Montgomery County Medical Society we are very happy and feel highly honored having the doctors' wives and other ladies as our guests tonight. We invited the doctors' wives because we feel that they are a most important link in the chain of success of the

practice of medicine. We hope that this occasion tonight will only mark the beginning to no end of many similar occasions."

A response was made by Mrs. Bryce Runyon, as follows:

"Mr. Chairman, Ladies and Gentlemen:

"On behalf of the ladies present may I thank Dr. Workman for his gracious words.

"A month or so ago, in working on our pageant, it was interesting to observe that out of 727 characters, less than 200 were women. This seemed to signify that, after all, the lion's share in the upbuilding of our community—and any community—and its progress through 150 years has been due to the wisdom and devotion of our splendid men.

"When our Lord was on earth, his ministry had three branches—healing, teaching and preaching. Often healing came first, opening the way for the other two.

"May we doctors' wives and friends salute you then, whose profession has the dignity of Divine Example, regarding with pardonable pride the noble contribution that is daily made to a healthier, happier, and wiser world by our husbands and friends, the doctors."

Dr. C. N. Keatts, of Indian Mound, read the toast to the doctor by Robert Louis Stevenson, as follows:

"Here are men and classes of men that stand above the common herd, the soldier, the sailor, the shepherd not infrequently, the artist rarely, rarelier still the clergymen, the physician almost as a rule. He is the flower of our civilization and when that stage of man is done with, only to be marveled at in history he will be thought to have shared but little in the defects of the period and to have most notably exhibited the virtues of the race. Generosity he has, such as is possible only to those who practice an art and never to those that drive a trade; *discretion*, tested by a hundred secrets; tact, tried in a thousand embarrassments: and what are more important, Herculean cheerfulness and courage. So it is that he brings air and cheer into the sick room and often enough, though not so often as he desires, brings healing."

The scientific program consisted of two numbers, "Arthritis," by Dr. Wm. Donald Davidson, Evansville, Ind. "State Medicine," by Dr. H. H. Shoulders, Nashville.

Guests were present from a number of counties in Kentucky and several adjacent counties in Tennessee.

Such programs certainly contribute to that unity and solidarity which are so essential to the preservation of the science and ideals of medicine.

#### *Sumner County:*

##### *Dr. Richard Barr Gives Barbecue Near Gallatin*

Dr. Richard A. Barr of Nashville entertained the members of the Gallatin Rotary Club and the Sumner County Medical Society July 3, with an old-fashioned barbecue at his country home, Elmwood, near Gallatin. Dr. Owsley Manier, president of the State Medical Society, was the principal speaker. His subject was "Public Health." Dr. H. H. Shoulders, secretary of the society, made a talk.

Among the out-of-town doctors present were Drs. Barney Brooks of Vanderbilt, W. B. Anderson, M. M. Cullom, W. H. Witt, Lucian Caldwell, J. C. Pennington, Kirby Smith, Jr., Dr. Kirtley, H. S. Shoulders, Milton Smith Lewis, Ted Morford, L. W. Edwards, Howard King, Allen Van Ness, R. C. Derivaux of Nashville, Tom Barry of Knoxville, Dr. Fentress of Goodlettsville, and Dr. Gwynn of Hartsville.

Other guests included Judge and Mrs. Ed T. Seay, Connelly Edwards, Miss Polly Simmons, Miss Lillie McNeil, Miss Green, and Miss Lucy Barry Hibbertt, Mr. and Mrs. R. M. Reese and family, and J. B. Bates.

#### *Washington County:*

On August 2, two papers are scheduled, as follows: "Injuries to the Eye," by Dr. M. E. Blanton. Discussion to be opened by Dr. N. E. Hartsook. "Importance of

An Early Diagnosis of Appendicitis in Children," by Dr. E. M. Fleenor. Discussion to be opened by Dr. J. H. Preas.

#### *Wilson County:*

The August meeting will be held on the 8th. The program will be a paper on "Poliomyelitis," by Dr. J. J. McFarland.

## OTHER MEDICAL SOCIETIES

The American College of Physicians will hold its Nineteenth Annual Clinical Session in Philadelphia, April 29-May 3, 1935.

Mr. E. R. Loveland, Executive Secretary, 133-135 South Thirty-Sixth Street, Philadelphia, Pennsylvania, is in charge of general and business arrangements, and may be addressed concerning any feature of the forthcoming session.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

The Dangers of the Promiscuous Use of Spinal Analgesia. Dr. H. R. Unsworth. New Orleans Medical and Surgical Journal. February, 1934.

The risks from spinal analgesia are not alone due to faulty methods of technic but the character of the drug, quantity, caliber of needle and posture of patient. A complete understanding of the patient from the standpoint of his medical status, psychic make-up and neurological state is important.

A patient may have a symptom free subtentorial neoplasm, an early cerebrospinal syphilis, an incipient multiple sclerosis, some type of blood dyscrasia, a spinal cord tumor and many other cord lesions. So it is necessary to be on guard for some of these conditions.

Though the immediate mortality from spinal analgesia is not high, yet, when one considers the numerous neurological syndromes which are presenting themselves from a too enthusiastic use of this method, it is important that great care should be exercised. It has been shown that spinal analgesia is often associated with fatal results and remote tragedies disabling the victim for life.



## DERMATOLOGY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

**Sensitization Tests: Their Value in Dermatology.** H. V. Mendelsohn, M.D., New York, N. Y. *Archives of Dermatology and Syphilology*. June, 1934.

This report represents the result of an allergic study of certain cutaneous diseases over a period of four years. A total of 262 patients were investigated. However, only 45 per cent were followed through completely. The following technics were used: (1) Dermal or Scratch Method. (2) Intradermal Method. (3) Indirect or Passive Transfer Test. (4) Patch Test. The great majority of tests were performed by the intradermal method. The total number of tests performed by more than one method was 12,600. The diseases included in this study were chiefly eczema, urticaria, and dermatitis venenata (over 80 per cent of the cases). There were 86 cases of eczema, in 25 of which there was a family history, and 20 a personal history, of allergy (chiefly asthma and hay fever). Of the 86 patients only 1 was clinically cured; 8 markedly improved, 20 improved, and 2 unimproved. In 55 cases the final results could not be ascertained. The results in urticaria and dermatitis venenata do not vary materially. Based upon the above the author came to the following conclusions: (1) Intradermal tests are of little value in demonstrating the cause of cutaneous diseases. (2) A great number of positive intradermal reactions are obtained, but they are rarely of practical significance. (3) Positive reactions to food substances or inhalants administered intradermally in patients with cutaneous diseases are far less specific than similar reactions to pollens in patients with hay fever. (4) The indiscriminate subjection of patients with dermatoses to a large number of skin tests is not justifiable. Far greater etiologic help can be obtained by securing a proper history and making a correct dermatologic survey. (5) Patch tests are of decided value, especially in cutaneous diseases which are due to external irritants.

## OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

**Removal of Nonmagnetic Foreign Bodies from the Vitreous Chamber.** F. Friede. *Archives of Ophthalmology*. June, 1934.

In two cases, foreign bodies which were lodged in the posterior, lower portion of the vitreous chamber were removed by the author through an incision on the equator of the sclera, parallel to the lower corneal margin. Haab's meridional incision, although presenting many advantages, would not have yielded a similar result. The equa-

torial incision made beyond the ora serrata allows access to the anterior, as well as the posterior, portions of the vitreous chamber and hence facilitates the removal of nonmagnetic chips. In case of necessity a scleral flap may be made in the upper half of the globe. Loss of vitreous must be expected in equatorial incisions; it was less than anticipated, especially in one of these cases, in which the foreign body had lodged below the posterior pole of the eye.

## PEDIATRICS

By JOHN M. LEE, M.D.  
Doctors Building, Nashville

**Poliomyelitis.** Results of treatment in the acute disease; analysis of reports on 4,400 patients treated with serum; observations on 2,660 untreated patients. Paul H. Harmon, M.D., Chicago. *American Journal of Diseases of Children*. June, 1934.

This is an exhaustive study of reports and literature on this subject, the results of which are concisely given in the following summary and conclusions:

"An attempt has been made in this review to compile and present in one place the experiences of numerous investigators who have treated acute epidemic poliomyelitis, emphasizing results that have been obtained with various types of serums. I have analyzed reports of 4,400 cases in which the patients were treated with serums and compared these with 2,660 cases in which no such treatment was given, the two series occurring coincidentally. Of the treated patients, 2,637 were seen early in the disease, the majority being in the preparalytic stage. It has been pointed out again that evaluation of the influence of a therapeutic agent in this disease especially must be a detailed and complex analysis, which will include variable factors that have been largely ignored until the past few years. The presentation of results should be standardized and extended to include even the rate and extent of recovery of muscular function in the reparative stage, since it is not inconceivable that serum or other agents may have an indirect influence even at such a remote date.

"Since there is about equal experimental evidence in favor of all four types of serum that have been used, namely, antistreptococcus horse serum (Rosenow and Nuzum and Willy), the antiviral animal serums (Pettit and others) and both convalescent and 'normal' human serum, only the results that have been actually obtained in clinical trial of these serums can settle the question of the supremacy of one type.

"Early diagnosis and treatment have been held as imperative for success in the serum treatment of this disease. The uncertainty of the course of the earliest type of poliomyelitis, the preparalytic stage, has been responsible for the apparently brilliant results when treatment has been applied in this stage. The explanation for apparently

favorable results when treatment is applied in the preparalytic stage is probably the fact that many cases regarded as preparalytic are in reality non-paralytic poliomyelitis. I have collected statistics on the fate of 531 untreated patients with preparalytic poliomyelitis; these show that 380 or 71.5 per cent never had paralysis at any time. The outcome in patients treated in the preparalytic stage does not differ from the average for untreated patients. Recent therapeutic experiments in which convalescent serum was given to alternate patients by Kramer and his associates and by Park support the same contention, showing no difference in the average outcome in treated and untreated patients.

"It has again been pointed out that the nature of the epidemic, the point on the epidemic curve when treatment was applied, the age of the patient and the type and degree of orthopedic after-care are all factors of extreme importance in estimating the effect of any program of treatment. In the past these factors have been frequently ignored.

"Notwithstanding the total failure of statistical presentations to favor certain types of serums, clinical observation that has been almost universally made of rapid symptomatic response to the administration of serum by an immediate drop in temperature and marked improvement in symptoms cannot be totally disregarded. All other forms of therapy in this disease have been a signal failure, with the possible exception of spinal drainage. Chemotherapy, medicinal therapy and artificial fever have all been tried without benefit. More data are needed before it can be said conclusively that serum of any of the four types is totally without value. There appears to be enough evidence from clinical observation to warrant the continued use of serums in early stages of acute poliomyelitis."

Statistical data are given in nine tables.

### **SURGERY—GENERAL AND ABDOMINAL**

By ROBIN F. MASON, M.D., F.A.C.S.  
735 Medical Arts Building, Memphis

Gas Bacillus Infection of Abdominal Wall. T. G. Orr, M.D., Kansas City, Kansas. *The Journal of the American Medical Association*. June 23, 1934. Page 2081.

The author calls attention to the small number of intra-abdominal operations in which gas bacillus infection develops as a complication.

The majority of cases of this type have come in association with appendicitis operations.

Ochsner, Schmidt, Butler, Eckhoff and others have reported such cases.

Including the three cases reported by the author 18 cases are recorded in the literature.

Case 1. A man 44 entered hospital with an appendix history. When seen he had an abscess which was drained. At same time an enterostomy was done for a complicating obstruction.

Five days later gas was noted in abdominal wall and B. Welchii was recovered.

Case 2. Man 67 admitted to hospital for old femoral hernia, which had strangulated. Hernioplasty was done and enterostomy also as a decompressant.

Forty-eight hours later gas was noted subcutaneously. B. Welchii was recovered from wound.

Case 3. A man aged 62 was admitted to hospital on account of an intestinal obstruction of 6 days' duration.

Because of poor condition a simple Witzel enterostomy was done.

Seven days later gangrene of scrotum was noted with crepitation of subcutaneous tissue in vicinity of enterostomy. B. Welchii was recovered from wound.

All the cases just reported died promptly.

In each case the gas bacillus probably came from the intestine itself, that being one of its habitats.

The author thinks that the use of gas antitoxin is quite logical in cases which expose the abdominal wall to infection from the bowel contents or as a prophylactic.

He believes also that the antitoxin is probably of benefit in the treatment of gas infection.

### **UROLOGY**

By TOM R. BARRY, M.D., F.A.C.S.  
Medical Building, Knoxville

Indications for Radical Surgery in Tuberculosis of the Kidney. A. J. Folsom. *Urological and Cutaneous Review*. Vol. XXXVI, No. 2.

The author states that tuberculosis of the kidney from a diagnostic point of view, unfortunately, has very few distinctive symptoms. Any case of persistent irritation of the bladder, with an acid urine, low in specific gravity, containing pus in varying amounts, and which, on being stained, fails to show any organisms, should be held suspicious of renal tuberculosis, until a true diagnosis is made.

He feels that the secretory bacilluria was a myth, and there is always a renal lesion present, as shown by Medlar, when T. B. is found in the urine, although it may be microscopic in nature, and before these lesions can be accurately diagnosed, it must reach a fairly well developed state. It will then show either by pyelogram or function tests, or both.

In his opinion, the thing that lies at the bottom of the controversy in renal tuberculosis is that the surgeon and clinician are talking about one kind of an entity and the laboratory worker is talking about a totally different kind of entity. The surgeon considers only a lesion sufficiently definite to be detected by our present diagnostic methods as well as having tubercle bacilli in the urine, while



the laboratory worker, searching among hundreds of serial sections, finds lesions recognizable only by such microscopic methods. A small percentage of these microscopic lesions with bacilluria may respond to proper medical and therapeutic care, before it advances to a destructive state. This is usually not true when it has developed to the point where it can be diagnosed by ordinary methods.

The surgical lesions are usually unilateral, being bilateral in about 12 per cent, while the microscopic lesions, as described by Medlar, are more commonly bilateral (about 88.3 per cent), and this author

feels that this type of lesions is usually found in miliary tuberculosis, and not in chronic surgical renal tuberculosis, the one more commonly being a silent terminal affair, the other a real clinical entity which must be dealt with by the surgeon.

He notes that the medical or sanatorium treatment of the chronic destructive lesions showed 15 per cent living at the end of five years, whereas the surgical method of treatment showed nearly 60 per cent cured after ten years. Therefore he concludes that surgery is the method of choice in these cases.

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### AGRANULOCYTOSIS — WITH REPORT OF A CASE AND WITH SPECIAL REFERENCE TO CERTAIN BARBITURATES AS A CAUSE OF THE DISEASE\*

W. H. WITT, M.D., Nashville

**A**GRANULOCYTOSIS, granulocytopenia, granulopenia, agranulocytic angina are names applied to a condition not recognized until recent years—the chief feature of which is a marked diminution of the number of leucocytes with a still more marked diminution of the granulocytes—the polymorphonuclear cells. The use of the word angina is unnecessary and misleading in that it is not always present. That is, cases occur in which there is no ulcerative process in the throat or elsewhere in the oral cavity. The chief value of the anginal—or sore mouth and throat features—is that they may be so characteristic as to at once suggest the nature of the disease being dealt with. In fact, unless a certain phenomenon present in the case I report is suggestive of this disease I know of no other physical finding that hints at the diagnosis. In Schultz' five cases reported in 1922—all showed a necrotic process in the mouth or throat and the characteristic blood changes above referred to. He and many other writers have labored—with poor success—to demonstrate a microbic process affecting the blood making organs. Whether these ulcerative processes are cause or effect is also unknown but the general opinion has been that the oral pathology represented a virulent infection that so affected the bone

marrow as to interfere with those processes making the white blood cells. But such a variety of bacteria has been grown that no conclusion as to etiology has been reached and the inoculation of rabbits with such bacteria has not produced agranulocytosis. Another view, and probably the correct one, is that the necrosis of the mucous membranes and, at times, of the skin are results—rather than sources of a destructive process—in other words are merely incidents in the progress of a profound constitutional affection. Apart from the very interesting necrotic processes found in the mouth and at times about the vulva, vagina and cervix—various other findings are reported but with no uniformity. Such are moderate lymph node involvement, enlarged liver and spleen and a terminal broncho-pneumonia—all having no special meaning. Equally without meaning are the other clinical features. Vague ill health, often of long standing, fever, prostration, fatigue, indefinite pains are all symptoms that mean nothing unless the necrotic lesions are observed or a white count is made.

It is only within the last year or so that observations have been made—especially as to etiology—that at once command attention—and command it particularly because there is a public health angle that must be stressed. Apart from some reports on the depressing effect on the blood-making struc-

\*Read before the Tennessee State Medical Association, Chattanooga, April 10, 11, 12, 1934.



tures by arsphenamine and some better known benzol preparations there had been no intimation that the condition of agranulocytosis, reports of which have become so prevalent (500 in all), was being in many instances brought about by drugs, particularly the barbiturates, and especially when used in conjunction with amidopyrine (pyramidon).

Kracke experimented on rabbits with benzene and benzene with olive oil, giving subcutaneous injections. He produced diminution even to absence of granulocytes. There followed a general and local infection of undetermined bacteriology and death.

He concluded that oxidation products of the benzene were responsible for the depressing effect on the elements of the bone marrow having to do with formation of polymorphonuclear cells.

He says that while the exact cause of agranulocytosis is not known the benzene ring found in abundance in coal tar must be considered and that cases of this affection should be carefully investigated with reference to the use of the newer drugs, many of which contain the benzene radical.

In his studies on rabbits he failed to produce the effect by use of amidopyrine and dial. I may say that the chemistry of the barbituric acid group and the coal-tar compounds is very complex—overlapping at many points and capable of producing an astounding number of combinations, many of which have been forced into the practice of medicine.

At a meeting of the Central Society for Clinical Research in Milwaukee in October, 1933, Drs. Madison and Squier of Milwaukee reported a number of cases of agranulocytosis—most of them, if not all, having for various conditions and over a longer or shorter period taken amidopyrine alone or allonal alone or a combination of the two. In the discussion that followed others were able to recall cases that had been taking these drugs. Madison and Squier have elaborated their report on the clinical cases—fourteen in all—in the *Journal of the A. M. A.* for March 10, 1934—and have

added to their study experiments on rabbits—only one of which, however, showed the characteristic blood picture. Notwithstanding the failure of rabbit tests to be very convincing, it seems clear to me that these observers have made a very important contribution to this problem.

In the Proceedings of the Staff Meeting of the Mayo Clinic for November 22, 1933, Dr. C. H. Watkins reports on a considerable number of patients with similar history and similar blood findings and the use of amidopyrine with or without some barbiturate. Four are reported to have taken nembutal and all died in the first attack. Five had taken amytal or its sodium salt and all had died. Various other drugs of this group had been taken with more or less serious results.

Beside these articles that appear to definitely incriminate allonal and pyramidon and several others as a cause of agranulocytosis there are a number of studies of the condition in which no attention seems to have been paid to the character of the drugs taken. Such reports are not pertinent to the matter in hand and are not reviewed.

We can hardly defend the proposition that agranulocytosis is an old disease—just now being uncovered. The blood findings—especially when associated with necrotic lesions in the mouth or elsewhere coupled with the very high mortality—are too unique in these days of careful clinical and laboratory study to have escaped attention.

The drugs having an etiological relation to the condition are no doubt more than allonal and amidopyrine, but so far these are the only ones that seem very potent and are the ones apparently implicated in the case I shall report. Whether these drugs have a direct effect on the bone marrow of some people—a kind of idiosyncrasy—is a question. Certain responses in some of the case reports suggest a cumulative effect on tissues for some reason hypersensitive to them. After being left off and later resumed, the effect on granulocyte formation was very marked. The fact that in rare instances arsphenamine and benzene and certain kinsmen of allonal have greatly re-

duced the granulocytes does not affect the strong indictment of those mentioned.

These reports and many others bearing on the use of sedative drugs, old or new, constitute a challenge to our age and our evident psychic trend. It is no small matter that our bodies that ought to flourish on work and sleep and fresh air, must have untold quantities of tobacco, Coca-Cola, coffee and all the various "als" to enable them to meet the demands of life.

### CASE REPORT

Mrs. B., age 50, was first seen by me on February 21, 1934. She had come to Nashville a few days before on account of a troublesome asthma but had gotten no relief. On the 20th she developed a fever and pain in her right abdomen toward the lumbar area. There was also some pain in left lower axilla on deep breathing. I was told she had had a pyelitis in November from which she had a slow recovery. On examination her mouth and throat were negative—as were the lungs and pleurae. The abdomen was slightly tender but carried no special suggestion of a pus kidney. On the right thigh there were three or four scarlet papules—very slightly elevated—one or two centimeters in diameter; they had, to me, no special diagnostic value. Examination was otherwise negative but was not very thorough. The temperature was  $101\frac{1}{2}$ . I prescribed on the basis of a pyelitis; applied adhesive tape to the left chest, ordered a specimen of urine taken with precautions for the next day. The urine on the 22nd had two plus pus, two plus albumen and many casts. The patient was not seen on this day but was free of fever and very comfortable except for what was described as a "weak spell" in the evening. She was seen the 23rd at 9 a. m. The temperature was normal, there was no pain in abdomen or chest but much pain in the legs. There were now many scarlet papules and one large bleb on the right wrist—an inch in diameter. She was quite weak and querulous and the blood pressure was 80 over 70. She was sent to the hospital for observation. White count was reported 500 with

no polymorphonuclears. Two hours later the white count was 300 with no polys. There was moderate secondary anemia but no important change in character of cells or the color index. A diagnosis of agranulocytosis was made and bearing in mind the discussion above referred to I made inquiry as to what drugs the patient had been taking. The family showed me a copy of a prescription containing allonal and pyramidon which she had been taking indefinitely for asthma. She had taken eleven of these capsules in the previous four or five days. Careful examination of mouth and throat, vulva and anal regions disclosed no lesions of any kind. There were now many papules and several blebs. It was also observed that any decided pressure with traction separated the epidermis from the derma. This was particularly noticed when the technician secured blood from the finger. The adhesive straps, applied for relief of thoracic pain, were lifted for a few inches and all the epidermis came off with the plaster. The patient was very weak, the blood pressure, as nearly as could be estimated, was 76 over 70. She was given on this date, the 23rd, full doses of the nucleotide and a blood transfusion and X-ray exposure. The nucleotide was given twice the next day. She was given no liver extract. On the 24th she developed a definite weakness in the right arm and leg. The pupils were normal as were the deep reflexes. The white count on the 24th was 200. Her mind was clear. She became weaker and died quietly at 11 p. m. on the 24th—a little more than three days after I saw her. In handling the body post mortem the epidermis everywhere separated easily from the derma. Study was made of the marrow of the eleventh rib, the spleen and other tissue. Nothing important was found except that in the bone marrow there was no evidence of activity on the part of those elements involved in development of granulocytes.

A communication from her physician in Mississippi was to the effect that in November, 1933, there had been necrotic lesions in the patient's mouth. No blood study was made then. The mouth lesions had en-



tirely healed when she came under my observation. I cannot claim that this patient's illness and death were positively due to the drugs used, but am inclined to that opinion.

Somewhat distinctive features of the case reported are:

(1) Absence of necrotic lesion in any visible mucous membranes, though there had been necrotic lesions in the mouth about three months before.

(2) A general scarlet papular rash—very slightly elevated—and varying from one to five centimeters in diameter. Several of these developed blebs with a clear fluid. A case reported by Zininger in *Journal A. M. A.*, February 17, 1934, had several indurated skin lesions but they were not necrotic apparently and not similar to these. They later suppurated.

(3) The very marked ease with which the epidermis was separated from the derma.

(4) An apparent hemiplegia about twelve hours before death—which appeared, however, not to have been a factor in her death.

It is quite possible that these features represent such an advanced stage of the disease that recovery could not be expected, but they are very interesting. The fact that so many people take amidopyrine with or without allonal and do not develop the condition described is no valid reason for failing to bear the danger in mind. It just so happens that I have never, so far as I can remember, prescribed either of these drugs except to approve their use when already on hand. But that is somewhat accidental for I do prescribe various similar drugs. If one prefers the use of these preparations I think he owes it to himself and his patient to watch the blood picture. I might also add—out of respect to my professional youth and out of respect to those fine old fellows that started me in this game a good many years ago—that all new things are not of necessity better than the old ones. I may even be pardoned for wondering how much we have improved on the coal-tar derivatives and the bromides and paraldehyde and chloral of forty years ago. And

when I look on a boy dying from the use of arsphenamine I just naturally wish he had been given iodides and mercurial inunctions.

But what's the use? Tragedies lie in the path of all progress, whether medical, political, educational or what not. Forward! March! is a good slogan. But so is Watch Your Step! And this association could do no better piece of work than, by collaborating with the retail drug trade, learn just how much traffic there is in sedatives—especially the newer ones, but not forgetting my friend chloral hydrate—and also to learn just what proportion is issued on prescription, what on refills, and what on lay demand—over the counter.

And the practicing physician can have no better standard in the selection of drugs or other therapeutic measures than to hold fast to the things he knows are good and be slow to take hold of things of which he knows little or nothing.

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#### DISCUSSION

DR. J. L. BIBB (Chattanooga): Mr. President and gentlemen: Dr. Witt always gives us something good. This time is certainly no exception. We are indeed grateful to him, not only for his fine discussion of this important subject, but for his good advice in emphasizing the fact that "all new things are not of necessity better than the old ones."

Many new things have been learned about agranulocytosis in the last two or three years, and I think we should pay a little more attention to them: First, that the angina with the dark, dirty, gray sloughing areas in the mouth is not necessary to make the diagnosis of agranulocytosis. He brought that out very nicely. One wonders, then, whether or not many more than the 500 cases of deaths that he reported were due to this disease, the clinician having missed them entirely, having made no blood count and not having looked for the lesions in the mouth.

The second thing that we have learned is that these lesions in the mouth and the ones he de-

scribed so graphically with the separation of the epidermis from the dermis of the skin are not the cause of the disease, but simply an expression of the profound constitutional toxemia due to this disease.

Dr. Stewart Roberts brought that out recently in a paper before the American College of Physicians, in which he had a chance to examine very carefully and watch several cases in exacerbations and remissions of agranulocytosis, and he reports that sometimes days ahead of any necrosis in the mouth or skin, the blood count went way down and the granulocytes were practically nil.

Dr. Witt referred to the report of Dr. Watkins at the Mayo Clinic. He did not give the proportion, which I thought was very high. Twenty-four out of the thirty-two cases at the Mayo Clinic had had, before the development of agranulocytosis, some form of barbiturates or pyramidon or amidopyrine. He referred to Madison and Squier, who had fourteen cases and came to the same conclusion, that these drugs must have something to do with the etiology. However, three years before these men reported, Schilling in his book, "The Blood Picture," suggested that he thought there was an anaphylactic etiology in this disease.

Kracke reported some experiments on rabbits in which he produced the disease of agranulocytosis by the use of benzene, and in eight of the nine human cases reported by him the patients had had some coal-tar derivative before they developed the disease.

Liverman reported a case of agranulocytosis following arsphenamine, and just as Dr. Witt said, of course arsphenamine being a close kinsman of these drugs, we again see the relationship. I think Dr. Witt has certainly proved his point.

The last case that we had in our city hospital came with typical dirty, gray ulcers, one just above the left incisor and one on the throat, with the blood count steadily going down, almost to zero as far as the polymorphonuclears were concerned. This woman had just recently finished a prolonged course of arsphenamine. So again we see the relation.

With regard to treatment the doctor said very little. In Charity Hospital in New Orleans, a division of Tulane University, they use ampules of pento-nucleotide of Smith, Kline & French, intramuscularly twice daily provided the patient is not very ill. If the patient is very ill they dilute that with 200 cc. of normal salt and give it intravenously. In view of the fact that it takes four or five days for effective stimulation of the bone marrow, with that first shot they give a blood transfusion.

A week ago today the Assistant Professor of Medicine brought his father in for a heart tracing, and he described just such a case that they had in Charity recently. The patient was given a blood

transfusion and started on the pento-nucleotide. There were no granulocytes the day of the transfusion. The next day he had a few myelocytes, the following day many more myelocytes, and then the third day polymorphonuclears began to appear and the patient went on and got the blood back practically to normal.

Again I want to thank Dr. Witt for his very fine paper.

DR. J. B. McELROY (Memphis): If one would orient himself on the subject presented by Dr. Witt, as well as the closely allied conditions, I think he would do well to begin with E. Frank's exposition of the hemorrhagic diatheses in *Enzyklopaedia Der Klinischen Medizin*. This work might have been studied with advantage by the many writers who have recently entered this field. I would, of course, refer to the original work of Werner Schulz and A. Leon in Germany, as the excellent monographic reviews of Feuld in *Ergebnisse* and Durfenorde in *Virchow's Arch.* In France the reports of Aubertin might well be considered, but they are rather confusing; and finally our own literature quite rich on this subject is to be recommended. The work of Lovette, Dennis, and Kracke are to be especially noted, and possibly there is no more reliable review of the whole subject than that of Miss Beck, of Richmond, in the August, 1933, number of the *Archives of Internal Medicine*. The recent literature as to the connection of the barbiturates and allied drugs has been very fully and accurately reviewed by Dr. Witt. This should, however, I think, be taken *cum grano salis*.

Tissue predisposition is a strange, incomprehensible thing. We do not understand why the component parts, so closely related, in a composite tissue such as the bone marrow should be selectively injured. Still such does occur and depending upon the component injured we have corresponding well defined clinical syndromes—with injury of the thrombopoietic tissue, thrombocytopenic purpura; with that of the erythropoietic, a normochromic anaemia without plastic changes—a very rare occurrence, though demonstrated by the careful reports of Kaz Nelson and others; if the granulopoietic tissue is injured, by the lack of chemiotactic or maturation factors, the agranulocythaemia or aleukia in the strict sense of the word, with the injury of all three, there results the aplastic anaemia or Frank's aleukia hemorrhagica. It may be assumed that various combinations of these lesions occur, resulting in clinical syndromes sometimes difficult to pigeonhole. A lack of appreciation of these facts has introduced much error into the statistical reports on the syndrome characterized by a variety of names, agranulocytic angina, agranulocytosis, agranulocythaemia, neutropoenia, and others; (e.g.) of the 317 cases collected from the literature by Hartwick, only 248 could with reasonable certainty be regarded as agranulocy-



thaemia—and I suspect if the cases now in the literature were subjected to competent scrutiny, there would be much less than 500 to stand confirmed, though it is becoming the fashion to report such cases. I have long been interested in these blood dyscrasias, and since my attention was called to Schultz Disease by the Article of Leon in the *Deutsches Arch. of Klin. Medicin*, I have followed with much interest the German, English and French literature on this subject. My own experience concerns six cases, all seen in consultation. They have all occurred in white women in the rather favorable circles of society. They have all set in rather acutely, blood picture before the onset was known in only one case. They have all presented necrotic lesion—one about the rectum only, the characteristic white blood picture, without evidence of the aplastic type of anaemia and without any evidence of the hemorrhagic diathesis has been present. One had jaundice—two have been of the recurring type, both with three attacks and still living, three died early in the first attack. There has been no history of drug, chemical or physical toxin, which could be incriminated, except in one, retrospectively. This one, I think, deserves especial mention. This was the case of a nurse who was admitted to the medical services of the Memphis General Hospital, while my son, Dr. J. W. McElroy, was resident physician, and I am indebted to him for the very complete study and record. The young lady went down with a paratyphoid A. infection, October 18, 1928. On November 18 the leucopenia fell to less than a 1,000 leucocytes without granulocytes, marked necrotic lesions—noma and pneumonia developed. The red cells did not fall more than could be accounted for by the para A. typhoid infection, and there was no evidence of a hemorrhagic diathesis. The clinical diagnosis was: Paratyphoid A. infection, agranulocytosis, marked necrotic changes, including a severe noma and pneumonia. The anatomical diagnosis at autopsy confirmed the clinical diagnosis. The paratyphoid A.B. was the only organism isolated from the blood during life. At autopsy the staphylococcus hemolyticus and *B. coli* were isolated from the heart's blood. I interpreted this case as a spleno-mesenteric aleukia associated with a paratyphoid A. infection. Since the reports of Madison and Squier, I have reviewed this case especially with reference to the drug treatment, and find that the patient had had from one to two 5 grs. pyramidon tablets a day for the month preceding development of the leucopenia with neutropoenia. Should therefore we hasten to ascribe to the pyramidon the agranulocytosis? I do not think so for many reasons, which time does not permit me to elucidate. I think we may say now that an individual predisposed by constitutional or conditional factors has his granulocytic system injured by some unknown cause or more rarely a known one, as focal infection, endocrine

and hepatic dysfunction, benzene, organic arsenicals, radio-active substances, bismuth, colloid silver or gold and barbiturate and pyroazon compounds so that his resistance is lowered to such an extent that frequently he becomes a prey to various sorts of infection.

Clinical agranulocythaemia is very rarely the result of chemical poisons; (e.g.) a few years ago in a study of salvarsan injuries, among 45 cases in which the haemopoietic tissues were injured by this drug, there were only three cases of thrombocytopoenic purpura and two of agranulocytosis. The clinical syndrome arising from these chemicals is more likely to assume the aplastic anaemia type.

A few words with special reference to the barbiturates and pyramidon in these cases. So far as I have been able to find there has been no reference to the etiological connection of these compounds with agranulocytosis, until the report of the observations of Madison and Squier, although careful reviews of the pharmacologic and toxic effects of these remedies have been carefully reviewed, I might refer to the Articles of Rennet in *Ergibnisse* in 1923, and the more recent article of Wagner in December, 1933, number of the *Journal A. M. A.* Usually the effects on the bone marrow are conspicuous by their absence. The experimental evidence is not strongly in favor of this or negative. Kracke was unable to produce a depression of the granulocytes by these substance in rabbits.

Of the triad of the group of their toxic effects are well known the skin manifestations and the pathology in the nervous system producing marked congestion and in some instances non-suppurative hemorrhagic encephalitis. I have had a case of exfoliative dermatitis, associated with encephalitis and pneumonia, due to luminal—a picture in all respects like similar injuries from salvarsan. Besides the necrotic lesions skin manifestations are foreign to true agranulocytosis, many other kinds of skin lesions may occur as the result of the associated sepsis, or as the toxic manifestations of associated conditions as poisoning by the barbiturates. The weakness, fever, slow blood pressure, skin manifestations, and cerebral involvement of Dr. Witt's case, I think, suggest the possibility of poisoning by allylisopropreonic barbituric acid. The agranulocytosis associated with this is, I think, the strongest clinical evidence yet brought forth as supporting the etiological relations of these compounds to agranulocytosis.

Dr. Witt's warning and suggestions as to the use of these drugs is very timely. I might make a further plea, viz.: if they are used to become acquainted with what they really are and their pharmacological action determined, not alone by the pharmaceutical house trusting them, why should one add pyramidon to that already contained in allonal?

DR. S. R. TEACHOUT (Nashville): I want to report a case of a child, fourteen years and seven months old. He had never taken allonal, or any other drug. I have gone to the trouble of looking over the records at the General Hospital in Nashville, St. Thomas Hospital, Protestant Hospital and Meharry Hospital reports. I could not get the reports of the Vanderbilt Hospital. This child had not taken allonal and he lived long enough to get twenty intramuscular injections of the pent-nucleotide. After the first few, an occasional granulocyte would appear and then disappear. He got ten intramuscular injections of liver extract, 10 cc. of dilute hydrochloric acid, he received Armour's liver extract, three times a day, five transfusions of 500 cc. of citrated blood. He suffered with headache and pains over the long bones of his arm and received some codeine for relief of these pains.

I could find only four cases at St. Thomas, none at the City Hospital. They do not classify blood diseases in such a manner that one can readily find out just what they are. At the General Hospital, all blood diseases are classified as anaemias. At St. Thomas, there was one white female, who came into the hospital in a diabetic coma, with gangrenous patches in the roof of her mouth. No history of having taken drugs or vaccines and she died within two days.

Another white female, who had sore throat, gray patches on the mucous membrane and tonsils, age 66, no history of drugs, white count of 800 on the 24th day of June, 1932. The white count went up to 2,800 the same day, then she died on the 25th, with white count of 500. Differential—100 per cent lymphocytes, blood sugar 115, urine negative. She expired with a septic temperature of 104 degrees.

Another white female of 50 had pain in the right arm and legs, pyelitis with sore throat, etc., and she also died.

This child, white, male, age 13, came into my office with weakness, bleeding from the gums, nervousness, headache and pains over the long bones of the lower extremities. He had a pharyngitis and a cloudy right antrum, shown by X-ray. He had taken no drugs at all except, a year and a half ago, he had received the rabies treatment. He had a white count of 2,100 red count of 1,311,000, hemoglobin 21 per cent. His blood count kept going down and went down with such a degree of regularity, that you could tell, almost a week before, exactly what time he was going to die. His blood count went down at the rate of 200 a day and he finally died approximately at the time we figured he would.

I don't believe the drugs have very much to do with it. I believe they are rather incidental. The patient is sick with something and the doctor prescribes for him, or the patient may take the drug

himself. I think it is probably due to an infection. They all run a septic temperature.

We took smears from the gums and from the throat. Dr. Hasty aspirated this cloudy right antrum and we took that. We took the blood when the temperature was down and when it was up and turned this over to Dr. William Litterer, who is now working to see if he can get some information from it. On account of Doctor Litterer's brother's death, I did not get this report in time to bring it to this meeting.

I believe this child of thirteen is the youngest case reported and having had no drugs and being a rather typical case, I think would tend to rule out the drugs. I hope to have something to report definitely when Doctor Litterer gets through. He proposes to inject it into rats, rabbits, guinea pigs and monkeys, on the theory that it might give infection that one animal is susceptible to and another is not.

DR. K. S. HOWLETT (Franklin): We should be under obligation to Dr. Witt for this timely warning against the indiscriminate use of barbiturates, not only by the doctors themselves, but by the laity. I frequently find patients, especially neurotic females, who have been using some of these "als," of which there are a multitude, for weeks and weeks, with the idea that some doctor had suggested to them to use them and that they were absolutely harmless. Especially would I mention luminal as one of the number that is being now so widely used by the laity. We all know that every family keeps aspirin on hand and uses it all the time without consulting any doctor.

I wonder if the profession has forgotten what chloral is. Of all the "als" that I have used, that is the one I have used longest. I used it before we ever heard of sulphonal and veronal and various other "al" preparations, and I have always gotten very much more uniform results from chloral than from any of the others. I know what to count on when I am giving that and know what results I am going to get, while my experience is that the results from all the others are not uniform at all and are very uncertain.

It strikes me that we should warn the laity, that we should warn our patients, that there are none of these remedies that are harmless and that they should not use them without the advice of a physician, without being carefully examined, and that they should not be prescribed indiscriminately.

One advantage of the use of chloral is that the dose is not already prescribed for us like it is with these preparations that are put up in tablets, each tablet to be a dose. I can prescribe that according to my patient's needs, according to the patient himself, and know just what I am doing.

I notice frequently in consultation with men who are younger than I when I suggest chloral, they



look at me a little questioningly as if it were a remedy they hadn't used, but I do think it is time to go back somewhat to the old remedies that are tried and to be careful in prescribing these other new remedies about whose effect we know nothing.

Especially should the general practitioner be a little slow about prescribing these remedies if we have got to watch the blood, as Dr. Witt suggested, as we go on, for which procedure very few of us are prepared.

DR. W. H. WITT (closing): Mr. Chairman and gentlemen: It was a foregone conclusion that men would not react alike to this matter of whether these drugs, particularly the two specifically mentioned, amidopyrine and allonal, have been at all the contributing cause toward the condition of agranulocytosis. This much is true, as I envision it, that agranulocytosis, granulocytopenia, is a new affair. I don't think we can get away from that. It is also true that the use of a large group of these drugs is a new affair, and that there has been a very indiscriminate use of them. That has been brought out by various contributors. All of those things are perfectly well accepted.

As to the history of not having taken drugs, let me say that I feel guilty at once, in that I very rarely ask the patient, unless there is some specific reason for it, but I am very much stimulated from now on to find out just what type of drugs, particularly those people who are neurotic or semi-neurotic, they have been taking. I believe if we would all do that we would find probably some rather enlightening information.

The inference that the patient had not been taking these drugs before is, to my mind, not worth much unless we know that that patient has been queried about what drugs he or she has been taking, or unless afterward we go back of the record, hunt up the patient that had this trouble, and eliminate the drug feature.

With reference to treatment, I would like to call

your attention to an article in the March number of the American Journal of Medical Science, in which the treatment of agranulocytosis with leucocytic cream is urged, and apparently with considerable good reason. Dr. Strumier, of Bryn Mawr Hospital, reports several cases of granulocytopenia and agranulocytosis. The report is quite worth reading, and there was success with some positive cases.

Dr. Teachout's case is highly interesting. I think it is quite correct to assume that his case is not due to taking of drugs. I think it is quite correct to assume that very few cases that take these drugs are going to develop agranulocytosis, but I do believe that the thing has pretty well been proven that their indiscriminate use over a long period of time is not good. Nearly all these people that have granulocytopenia have been more or less invalids for month or years. We don't know what they have been taking unless we go into it very carefully and with specific inquiry. My own feeling is that Madison and Squier and Dr. Watkins of the Mayo Clinic have stirred up something that is important, and I would say that in the next year or two our journals will be pretty well filled with something of this kind and we are going to get somewhere as to etiology and maybe as to treatment. As to prevention of it by restrictive legislation I do not feel quite so sure. If we declare a law against amytal and luminal and all those things, then there comes in our friend the bootlegger, with whom some of us have more or less a personal acquaintance, and he will see to it that they get the things they want.

I have been, like Dr. Howlett, a prescriber of chloral, nearly always with bromide, and I don't say it is harmless at all, but I do think it is probably relatively less harmful than these other things. I believe the combination of bromide and chloral will reach situations that we now reach with drugs that are not quite so safe. Again I say, watch your step.

## THE PERIPHERAL VASODILATING EFFECT OF THEOBROMINE GIVEN ORALLY AND INTRAVENOUSLY\*

CECIL E. NEWELL, M.D., Chattanooga, and EDGAR V. ALLEN, M.D., Division of Medicine, The Mayo Clinic, Rochester, Minnesota

CHRONIC or subacute inflammation and sclerosis of the peripheral arteries frequently result in occlusion and marked diminution in the flow of blood to the extremities. The two conditions are recognized clinically as thromboangiitis obliterans and thromboarteriosclerosis obliterans\*\*. Coldness and discoloration of the extremities, claudication, rest-pain, ulcers which heal slowly or not at all, and gangrene are symptoms of these diseases, depending on the extent, degree, and rapidity of occlusion of the arteries of the extremities.

Several methods for increasing the flow of blood to the feet and hands have been described; artificial induction of fever (2, 20), ingestion of alcohol (4), sympathectomy (3), intramuscular injection of acetylcholine (11, 19), diathermy (8), and anesthesia (7, 12, 21). The chief objections to most of these methods are the temporary nature of the results. The ideal procedure for increasing the flow of blood to the extremities of which the main arteries are occluded would be one which would produce constant or nearly constant vasodilation of high degree. Permanent interruption of the sympathetic nerve pathways is the only one of the procedures just mentioned which can be considered ideal. A simpler method

would be repeated oral administration of some drug which would produce maximal or nearly maximal vasodilation, more or less constantly, without effecting toxic or unpleasant results. Although it is improbable that such a substance exists, we have thought it worth while to experiment clinically with theobromine. This drug has been shown to be of value in increasing the flow of blood through the coronary arteries (9, 17, 22.) The idea that the substance might be of some value in cases of chronic occlusion of the peripheral arteries was not new. Dock reported the case of a man, fifty-seven years of age, apparently suffering from arteriosclerosis with occlusion of the peripheral arteries of both lower extremities. Claudication was markedly lessened with the daily administration of 30 grains (2 gm.) of theobromine sodium salicylate, but increased repeatedly when administration of the drug was discontinued. In 1931, Scupam reported the use of theobromine in thromboangiitis obliterans and in thromboarteriosclerosis obliterans of the peripheral arteries. He noted not only a subjective response to treatment, but also an increase in cutaneous temperature measured with the thermoelectric couple, and a fall in temperature when medication was suspended. No other mention of the use of preparations of theobromine in peripheral vascular disease of the extremities was found in a search of the literature.

### TOXICITY OF THEOBROMINE AND THEOBROMINE SODIUM SALICYLATE

Herrick reviewed the literature on theobromine sodium salicylate and found occasional mention of nausea, vomiting, diarrhea, palpitation and slight fever following administration of it. Skin eruptions were noted rarely. He himself took 150 grains (10 gm.) in one day and noted only palpi-

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\*\*This term is used advisedly here to replace the designation endarteritis obliterans, which is inaccurate since no inflammation is present in the arteries and since it fails to indicate that the eventual occlusion is due to a thrombus. It is less unwieldy than "arteriosclerosis with occlusion" and is an accurate descriptive term similar to thromboangiitis obliterans in this respect.



tation and a sense of anxiety. Taylor found that patients tolerated large daily doses of theobromine taken by mouth, over long periods, without ill effects. Erdeyle and Neuhof noted sloughing of tissue when theobromine sodium salicylate was accidentally injected outside the vein, but found no untoward reactions incident to intravenous injection several times a day. In our experiments, no untoward reactions were noted when the drugs were given, either by mouth or injected intravenously, save in one instance.

A young man with thromboangiitis obliterans, causing marked occlusion of the arteries of the lower extremities, was given 20 cc. of 5 per cent theobromine sodium salicylate in physiologic saline solution intravenously. Within ten minutes after completion of the injection, the patient had a chill which was severe for twenty minutes and mild for another forty minutes. Chilly sensations were experienced for an additional twenty minutes. During the chill he complained of severe, throbbing, generalized headache, backache, extreme weakness, palpitation, anxiety and nausea, and an hour and a half after the injection he vomited 700 cc. of bile-tinged fluid. He was pale, restless, and excited. The blood pressure, which was normally 140 mm. of mercury systolic, and 92 mm. diastolic, dropped to 75 and 52 mm. of mercury, respectively. The pulse rate increased from 72 to 140 beats each minute, and frequently extrasystoles were noted. The oral temperature rapidly rose to 102 degrees F. (38.9 degrees C.) following the chill. The surface temperature of the lower extremities dropped 3.7 degrees C. The nausea, vomiting, weakness, headache, backache, anxiety, palpitation, tachycardia, lowered blood pressure, and fever persisted for approximately twenty-four hours. The reaction then began to decrease, and with the exception of the weakness, which lasted several days, all symptoms and signs disappeared within another twenty-four hours. Study of the freshness, preparation and sterilization of the drug, of the apparatus, and of the technique of administration disclosed nothing im-

perfect. Bacteriologic examination of the solution was made, and 40 cc. of the same preparation was injected intravenously into a dog. No growth of organisms occurred and the animal did not become sick. Idiosyncrasy of the patient to the drug was assumed.

## MATERIAL AND METHODS

Theobromine was given orally to fifteen patients and theobromine sodium salicylate was given intravenously to seven patients. Theobromine was administered orally in gelatin capsules containing 5 grains (0.3 gm.) each, in doses of 20 grains (1.3 gm.) while the theobromine sodium salicylate was given in single intravenous injections of 20 cc. of 5 per cent solution. In all our studies we have considered the temperature of the skin to be an index of the arterial circulation.

It became obvious early in the course of these experiments that the studies should be carried out under carefully supervised conditions. This was necessary because of the observation that the temperature of the skin fluctuates widely (Fig. 1). The chief cause of such variations is a changed environmental temperature (Fig. 2). The environmental temperature, even if constant,

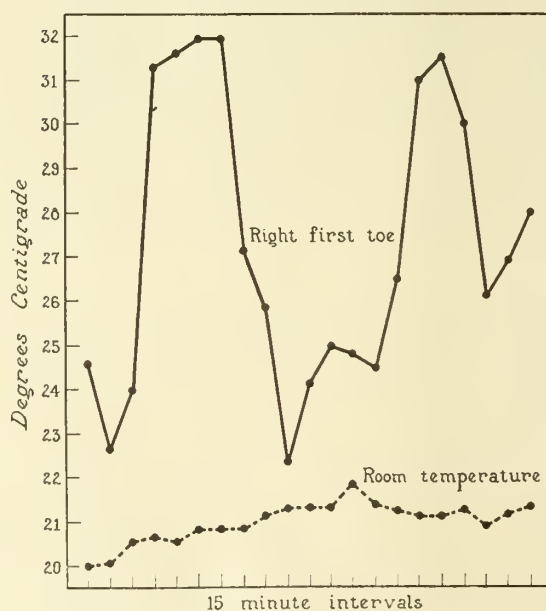


Fig. 1. Physiologic variation in the surface temperature of a person without arterial disease.

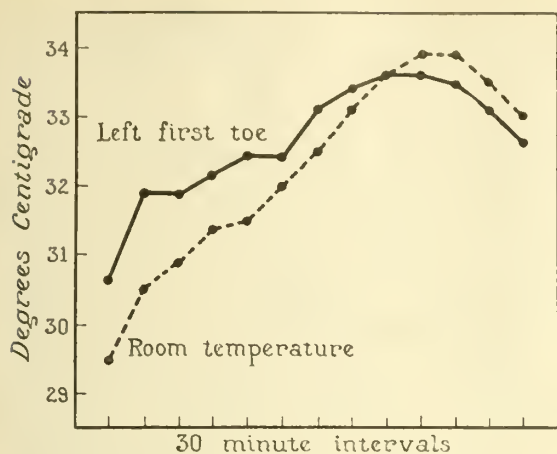


Fig. 2. The effect of room temperature on the surface temperature of the first left toe of a normal person.

may vitiate the results of experiments. A high room temperature may cause extreme vasodilation, an attempt of the body to rid itself of warmth. Such a degree of vasodilation may be insignificantly accentuated by efficient vasodilating measures simply because little additional vasodilation is possible. Emotions affect greatly the temperature of the skin of the extremities. We have observed these effects in several instances. The temperature of the skin of the toes of a person with thromboangiitis obliterans fell markedly and rapidly when another patient discussed an operation on the sympathetic nerves. This effect seems to explain the origin of the common expression "cold feet" used, for example, when referring to an attempt to make a decision on some matter of importance. These psychic factors cannot always be evaluated, as they may be minor or even subconscious. Ingestion of water or food, drowsiness, sleep, a draft of air, and perspiration may influence the temperature of the skin; Barker has shown that vasoconstriction is a definite effect of smoking tobacco. In addition there may be cyclic or rhythmic variations in the warmth of the skin, occurring in much the same manner as Mueller and Brown have shown for the blood pressure. Too little is known about all these matters and failure to recognize the effects of them may lead to erroneous conclusions regarding the efficacy of methods used to increase the circulation.

As stated, all of the factors influencing vasomotor activity cannot be controlled. They can, however, be minimized. This was done in our experiments by the methods to be described.

All medications, physiotherapy and baths were suspended the day before studies were made. Only patients without fever were studied. The patients lay in bed for thirty minutes with the body covered and the feet exposed to room temperature before control readings were begun. During studies of temperature the patient was kept awake, and an attempt was made to keep his attention diverted by light conversation or reading. The temperature of the mouth and of the air close to the feet was frequently determined. An attempt to keep the room temperature constantly within a minimal variation in each case was rigidly adhered to, although all patients were not subjected to the same room temperature. By closing doors and windows, and the use of screens, practically all drafts were excluded. No meals and only small amounts of tap water were allowed during studies of temperature. Control readings were carried out for at least one hour, but usually over a greater period of time, before administration of theobromine. Readings of the temperature of the skin were made at intervals of ten, fifteen, and thirty minutes. The thermocouple junction of the portable electromotive thermometer described by Scott was squarely but lightly held against the skin of the plantar pad of the toes for approximately five seconds in each instance to allow the needle which registers the temperature to come to rest.

## RESULTS

*Intravenous injection of theobromine sodium salicylate.*—One subject without occlusion of the peripheral arteries, three patients with thromboarteriosclerosis obliterans, and three patients with thromboangiitis obliterans were given theobromine sodium salicylate intravenously. In each instance the temperature of the skin of the toes fell within ten minutes after the injection and then increased (Fig. 3.) The in-



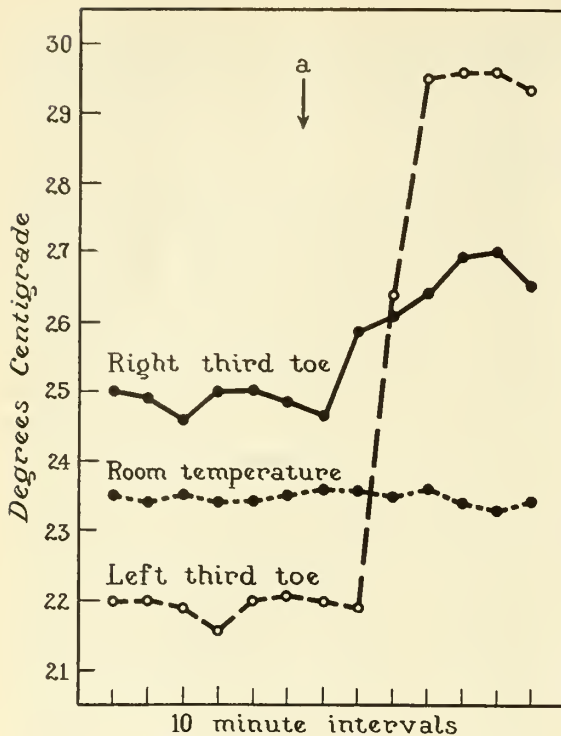


Fig. 3. Increase in the surface temperature of the toes following intravenous administration of 20 cc. of a 5 per cent solution of theobromine sodium salicylate in a case of thromboangiitis obliterans. Theobromine sodium salicylate administered at *a*.

crease in temperature of the skin varied widely, but the maximum was reached in each instance in between forty and eighty minutes. The drop in the temperature of the skin immediately following the injection averaged 0.8 degrees C. The maximal increase in temperature of the skin was 7.8 degrees C. and the minimal 0.5 degrees C.; the average was 2.8 degrees C. Studies to determine the duration of increase in temperature of the skin were not made.

*Oral administration of theobromine.*—Encouraged by the vasodilation following intravenous administration of theobromine, we made studies on the response of the temperature of the skin to oral administration of theobromine. Twenty experiments were done on fifteen patients with thromboangiitis obliterans or thromboarteriosclerosis obliterans. An increase in temperature of the skin was noted in each instance (Fig. 4). A study of the tabulation shows that the response of cutaneous temperature

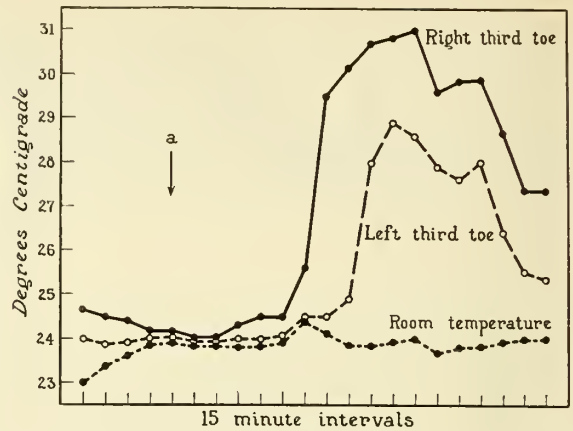


Fig. 4. Increase in surface temperature of the toes following oral administration of 20 grains (1.3 gm.) of theobromine in a case of thromboarteriosclerosis obliterans. Theobromine administered at *a*.

to oral administration of theobromine was less than 1 degree in five instances, and between 1 and 2 degrees C. in seven instances. There were only eight instances in which the increase in temperature of the skin exceeded 2 degrees C.

Comparison was made with the vasodilation following artificial induction of fever by intravenous injection of typhoid vaccine in thirteen instances. The average increase in the temperature of the skin caused by theobromine was 1.8 degree C., while that caused by artificially induced fever was 4.2 degrees C. The efficiency of theobromine in per cent was calculated by dividing the former figure by the latter. The result shows that theobromine is 42 per cent as efficient as artificially induced fever in increasing the temperature of the skin.

The average duration of the increase in temperature of the skin following ingestion of theobromine was two hours. In this regard the drug is much less efficient than typhoid vaccine intravenously injected, for the vasodilation induced by the latter ordinarily endures many hours.

### COMMENT

Our studies show that theobromine sodium salicylate, when injected intravenously, uniformly produces an increase in temperature of the skin of the toes. The inconstant results following oral adminis-

tration of theobromine are apparently due to variations in the speed of absorption of the drug.

It is improbable that compounds of theobromine will prove of any great value in treatment of peripheral vascular disease. The one instance of an untoward reaction following the intravenous injection of theobromine sodium salicylate indicates the danger of this method of administration. It cannot be recommended for use as a routine. Artificial induction of fever so greatly excels use of theobromine in the production of vasodilation that the drug can be no more than a feeble auxiliary to this method of treatment. However, since theobromine can be given orally in fairly large doses without producing toxic effects, it should be used as an adjunct to artificially induced fever in cases in which vasodilation can be demonstrated following oral administration of the drug. We believe it is dangerous to give typhoid vaccine intravenously to persons of advanced age, or to those with clinical evidence of advanced arteriosclerosis. Oral administration of theobromine may be of some value in such cases, particularly since the patients are usually not suitable subjects for sympathectomy, which remains the ideal method of effecting vasodilation. Persons with cold feet, without occlusive arterial disease, may benefit from the administration of theobromine. Such persons do not ordinarily have sufficient distress to justify sympathectomy or repeated intravenous injection of typhoid vaccine.

We do not know the maximal amounts of theobromine which can be given over long periods of time without effecting unpleasant results. To many patients with angina pectoris, 5 grains (0.3 gm.), with an equal amount of sodium bicarbonate, have been given three times a day over long periods. This amount is probably inadequate to effect appreciable dilation of the peripheral arterioles and we suggest that the amount be doubled or increased four times when the drug is used for increasing the temperature of the skin of the peripheral parts. Unpleasant effects would indicate the neces-

sity for diminishing the amount of theobromine given.

## CONCLUSIONS

1. The temperature of the skin of the peripheral parts fluctuates widely; the effect of any procedure on the temperature of the skin must be studied under carefully controlled conditions.

2. Theobromine sodium salicylate when injected intravenously produces vasodilation in all instances. Such administration cannot be recommended as a routine.

3. Theobromine when given orally in amounts of 20 grains (1.3 gm.) produces peripheral vasodilation, which is about 42 per cent of that noted following artificial induction of fever by intravenous injection of typhoid vaccine. The vasodilation endures about two hours.

4. Oral administration of theobromine may be of some value in treatment in instances in which it is inadvisable to use methods of greater value. It may be used as an adjunct to these methods of treatment.

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## THE CARE OF THE HYPERTHYROID\*

LEE K. GIBSON, M.D., F.A.C.S., Johnson City

THERE is probably no other field in surgery in which such strides have been made in the last two decades as have been made in the handling of the hyperthyroid. This notable progress has been due to the brilliant accomplishments of a comparatively few heroic workers, who have not only given the profession a refined technique, but, what is equally important, means of preparing patients whereby they are rendered safe operative risks, until now the operative mortality is held below one per cent. This has been accomplished only as the reward of incessant application, untiring study and unrelenting research. Their spirit is well voiced by Hertzler, "Whosoever is satisfied with his thyroid surgery is no idealist."

Hyperthyroidism is a most complex syndrome, which unfortunately has been burdened with a nomenclature of such multiplicity that I believe has impeded in no small way the clear understanding of this (1) thyro-neuro-polyglandular disease. I shall not enter into the discussion as to diffuse toxic goiters and nodular toxic goiters having a different type of hyperthyroidism, yet there is a definite difference in the response ratio after the administration of Lugol's solution. In the former, the need for surgical interference is more urgent, yet even this type is not to be classified as an emergency. Another difference noted in the two types is that in the nodular toxic variety very little benefit is derived from polar ligation, and in this type toxicity is seldom encountered before the third decade of life. I believe toxic goiter, either diffuse or nodular, would better explain the thyroid's part in this syndrome, which is often superimposed on (2) individuals with a nervous system far below par. As Bartlett states, "With rare exceptions they have been somewhat nervous from childbirth . . . not being capable

of taking life at a moderate pace. (3) Vandenberg refers to them as "the frailer type of individuals who have had everything the matter with them in the absence of disease to cause it." So with this type of individual to begin with, plus stimulation and toxicity of hyperthyroidism, it is readily understood why special measures must precede as well as follow the surgical extirpation of the thyroid gland if we are to render the best results to our patients. Hyperthyroidism often occurs simultaneously with other maladies. One of our cases was suffering with advanced pellagra, and showed marked improvement following a thyroidectomy, only to return to poor living conditions and die two and a half years later of pellagra. Reduced sugar tolerance is often encountered; less frequently true diabetes mellitus coexists with hyperthyroidism. Gall-bladder diseases, duodenal ulcers, asthma, endocarditis, pelvic disease, and general circulatory failure may be concomitant with hyperthyroidism. As to the choice of first correcting the concomitant condition or operating on the thyroid, this must be left to the discretion of the surgeon. The consensus of opinion of the leaders in this type of work, that is the men doing the greatest amount of thyroid surgery, is to first correct the hyperthyroidism, and later, after the patient has sufficiently recovered and has especially shown improvement in the cardiocirculatory system, to do the second operation. The exceptions to this rule are few, possibly limited to emergency operations where the symptoms are more urgent than those of the hyperthyroidism and malignant conditions; (4) for the hyperthyroid is not a preferred risk. Again pregnancy may be a complicating factor. (5) If the hyperthyroidism is marked, steps should be taken to correct this, disregarding the pregnancy. The incidence of auricular fibrillation, according to Marsh, (6) is more dependent upon the age of the patient and the duration of the hyperthyroidism than it

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is on the intensity of the hyperthyroidism; while Wishart states (7) that auricular fibrillations may be the earliest indication of thyrotoxicosis. These patients are apprehensive and very susceptible to psychic trauma.

The symptoms of hyperthyroidism fall naturally into two main groups, as has been suggested by Goodman, (8) "one of which is due to disorder of the metabolic processes, the other the result of the disordered nervous function," and that their ratio of intensity is usually equal, depending upon the degree of hyperthyroidism.

In dealing with hyperthyroidism every effort is made to minimize postoperative complications and sequelae, and this is best accomplished by painstaking and thorough preparation, together with an intelligent evaluation of the patient's condition. Not all hyperthyroids are amenable to surgical treatment, and the ability to recognize these and the courage to hold off to see if they will not improve reflects gloriously to the surgeon's credit. In young children extreme precautions must be taken, as hyperthyroidism here is usually due to the diffuse toxic type of goiter. Postencephalitis cases with mild hyperthyroidism are good cases to leave alone.

Careful history taking is an art, and here is applied with the best results. It is important to ascertain the early life history, the domestic relations, emotional strains, and the ability of the patient to adjust herself to the various walks of life. Have they been irritable? If so, have they always been so? And is their present state only an exaggeration, or has the change been sudden? Have they lost weight? If so, how much, and are they still losing? How rapidly has this weight been lost? Has there been any intercurrent infection that could possibly account for all or part of this weight loss? Tachycardia (which is invariably present), how long has it been noticed? Is it periodic or constant? Is it brought on by a physical effort, and is dyspnea present? Muscular weakness, when noticed, and are the quadriceps affected? Has their tremor only accompanied effort (it can often be felt by

the patient before it can be seen by the examining physician)? How do they tolerate heat and cold, and the degree of their perspiration? Have they been able to sleep? Have they noticed clumsiness or difficulty in writing? In the female the menstrual habit is inquired into. This may require repeated sittings, but here the surgeon is best able to judge the patient's ability to stand surgery, and at the same time obtain the patient's confidence, as well as to fairly accurately estimate the amount of benefits that the patient will derive from treatment. Lahey emphasizes that at this time, and not after preoperative treatment has been carried out, can the stamina of the patient be best estimated. Bartlett cautions us that we cannot make new individuals of these patients, but at best only restore them to the state of health they enjoyed prior to becoming hyperthyroid.

Physical examination of these patients should be very carefully made, with special attention paid to the whole as well as the component parts. The muscles of the eye, as well as the eyelids, are noted, foci are checked, the relation of the thyroid to the trachea is noted, and the integrity of the trachea itself is checked. This is best accomplished fluoroscopically. The patient, standing behind the screen, is asked to hold her breath and strain; if no bulging is noted she is then asked to try an inspiratory effort with her mouth closed and nose held. Swallowing is then watched to observe the excursions of the gland. The cords are carefully checked. The chest is rayed and the size of the heart observed. Special attention is paid to the heart rate and its rhythm; its action following ordinary exercise (such as walking a hundred yards) is noted. Can they step up into a chair? How long can they hold their breath on expiration?

Notwithstanding a large majority of these cases present heart symptoms, according to Nellie B. Foster less than fifty per cent of these cases showing heart symptoms have organic lesions. (9) Approximately ten per cent go into fibrillation. Crile shows us that the heart is not only stimulated in

rate, but in capacity as well. If signs of congestive failure are present then special treatment is required. Basal metabolism readings are carefully checked and allowances made for errors. Blood chemistry, including blood sugar and serum calcium, as well as the urea and non-protein nitrogen, is done.

The patients are put to absolute rest, this being best accomplished in a hospital with a special nurse. Visitors are reduced to a minimum, and no one is allowed to discuss the operation with the patient. The fluid intake and output are checked and a fluid balance maintained. Lugol's solution is given 2 cc. in twenty-four hours, usually in three doses administered after meals. Here undoubtedly is one of our best weapons, thanks to the epoch-making work of Dr. Plummer. It is to be hoped that such a valuable aid to the patient as a surgical preparation will be left for the use of the surgeon, as it loses its virtue largely when given otherwise, thus depriving the patient of its beneficial results when used preoperatively. In spite of voluminous literature on this subject, still too often Lugol's solution is being prescribed as a curative drug.

If the patient cannot rest well at night luminol in small doses aids materially; rarely morphine has to be resorted to to obtain the desired rest. Frequently the removing from unsuitable domestic conditions to a quiet hospital room alone has a very soothing effect; likewise the daily reassurance of the surgeon tends to relieve considerable tension.

High caloric diet is given, with an unusual amount of carbohydrates and a smaller ratio of protein (for it is generally understood that in hyperthyroidism the liver is damaged by the reduction of its normal glycogen content). Trays are made especially attractive, and fruit juices, well sweetened, are given twice daily between meals. Patient weight is carefully checked every seventy-two hours.

If oedema is present fluids are limited and diuretics are given. Auricular fibrillation is treated with quinidine, both before and

after the operation, and even then the patient cannot be positively assured of its relief, though most often it clears up. Digitalis is employed in selected cases where rest will not restore compensation. Occasionally transfusions aid in bringing the patient to an operable state, and it has recently been pointed out (10) that normal blood serum contains an antithyroid substance which tends to counteract the toxicity of hyperthyroidism. A desiccated substance derived from the blood serum, called hemokrinin, has been administered to toxic goiters resulting in a gain in weight as well as a lowering of the basal metabolism reading. No response from this substance has been observed, however, in cases that have been activated by the administration of iodine. This type of hyperthyroidism does not respond well to Lugol's solution either.

If the above measures do not bring the patient to a condition justifying a partial thyroidectomy or lobectomy, then a polar ligation may be resorted to, if the case be of the diffuse toxic type, or they may be sent home to await a remission of their symptoms. Usually at the end of two weeks (that is, between twelve and eighteen days), the maximum benefit is obtained and immediate steps are taken to prepare them for operation. Glucose is given the afternoon before, preferably by vein. Sodium amytal is given at bedtime, and on first awakening the following morning. An hour before operation morphine sulphate is given hypodermically. Novocaine in filtration is our choice anesthesia for the operation, augmented by light nitrous oxide if required. We check phonation during the operation by having the patient say "anna." Care is taken to try and preserve the parathyroids both in our polar ligations and the preservation of a thin layer of thyroid tissue on the posterior capsule. However, in a recent case in which a careful examination of the gland removed showed no parathyroid bodies, on the third day showed the classical signs of tetany—bilateral Chvostek's sign, Trousseau's sign, tingling and numbness of the face and extremities, and typical tetany hand. These symptoms were partially re-



lieved by the intravenous administration of calcium chloride, 10 cc. daily for three days, and later large doses of calcium lactate by mouth, and one-tenth grain doses of parathyroid substance. This complication is fairly uncommon, yet nevertheless disturbing. Too much emphasis cannot be placed on perfect hemostasis, yet in accomplishing this the recurrent laryngeal nerves must be kept constantly in mind, for a soft whispering voice is not soothing to the surgeon.

The operation over, the patient is given one dram of Lugol's solution in 500 cc. of water by rectum, and morphine is given as necessary for rest and relief. Fluids are given in the tissues as required. The patient is observed closely for hemorrhage, especially for the first twenty-four hours. If anoxemia appears oxygen is administered. Fluids are given by mouth as soon as the patient can take them. The patient is usually allowed up on the sixth day, and allowed to leave the hospital on the eighth. Cases that have had large toxic adenomas are often given thyroid extract for several months. Diffuse toxic goiters are usually given Lugol's solution for a varying period postoperatively. These patients are allowed to return to work as soon as their condition justifies.

In conclusion, I wish to say that our treatment of each hyperthyroid is individualized, and the treatment outlined above is varied from as frequently as necessary. Hopeless cases, such as the emotional unsound and the delirious, as well as the cases that do not respond to preoperative treatment, but continue to lose weight and do not respond to the administration of Lugol's solution, are rejected for operation.

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#### DISCUSSION

DR. W. D. HAGGARD (Nashville): Mr. President: I have enjoyed very much Dr. Gibson's paper. It shows not only a very considerable deep interest in the subject, but a careful study of the individual patients that have come under his care. I don't know that I have heard a better presentation of the subject of hyperthyroidism. Of course, it is impossible for him to go into the differential diagnosis. I think perhaps the thing that we think of the most and are often deceived by is the case of so-called paroxysmal tachycardia, particularly if the patient should incidentally have a goiter that is not operative in the production of the hyperthyroidism, at least of the tachycardia.

These cases should be studied closely and carefully weeded out, because if we make the mistake of removing an innocent goiter from a patient with a paroxysmal tachycardia, we still have the paroxysmal tachycardia, and it is well known that it is one of the most deceptive and one of the most difficult things to cure.

I was interested in what Dr. Gibson had to say about the preparation of these patients with iodine, and particularly his accentuation of the fact that it is unwise to undertake to cure or treat a patient with iodine. Now so far as we know the action of iodine is to give a better secretion. In the hyperthyroid cases we have a dysthyroidism, but with the toxic adenoma we have more of a pure hyperthyroidism.

Be that as it may, what the iodine actually does, apparently, is increase the amount of permeability and also of the filling of the sinus with colloid. When it does that, we know that the sinus is full of more than one layer of epithelium and the colloid physically pushes it against its own wall, so to speak, in a very crude way of illustrating, and prevents the hypersecretion, that is all. It has been shown that after a comparatively short time the amount of colloid that is manufactured ceases and as a consequence there isn't the pressure against the proliferation of the cell and its activity and its secretion, and therefore the iodine is of no further value, in fact it is harmful to the patient. The worst cases that we have had to contend with were the people who had had iodine for weeks, months,

and sometimes years. It impressed us so much that Dr. Floyd and I wrote a little paper on the danger of iodine as a routine treatment for goiter. It is a wonderful preparation, but as Dr. Gibson says, if the surgeon is deprived of its virginal effect upon hyperthyroidism then he is estopped from the use of his most important ally.

The thought, therefore, is that inasmuch as we cannot cure this disease by any known method except by operation, the preparation that has been outlined and the excellent steps in the technic I think are extremely valuable.

I want to point out the fact that these cases which hitherto have been so difficult of management and whose mortality, if you take them over a long period, is something like seventeen per cent, and that in Guy's, whose Hale White had a mortality in the toxic cases of thirty-eight per cent, must be gotten at a period when the curability is assured. The technic that Dr. Gibson has outlined has given, in the hands of many men, less than one per cent mortality that is more or less constant, and I think that we are very much indebted to Dr. Gibson for this very illuminating, very interesting paper.

DR. W. D. L. RECORD (Chattanooga): The paper just presented is very interesting and quite thorough.

There are two or three things brought out, however, that I would like to emphasize.

In hyperthyroidism complicated by other diseases other than emergency conditions, as a general rule it is far safer to treat the hyperthyroidism first. If the hyperthyroidism is very mild and the patient has a focus of infection, it would be all right to clear the condition first, hoping that the thyroid condition will subside.

A good history and physical examination are essential in thyroid cases as in any other condition. Differentiation of hyperthyroidism from leukemia, essential hypertension and neurosis is quite difficult. The blood examination would differentiate leukemia. Neurotic patients often have an increased metabolic rate which tends to get lower after repeated readings—if rate does not reach normal, or a diagnosis cannot be established it is well to try the effects of iodine. Iodine in hyperthyroidism will reduce the B.M.R. and improve the symptoms. Basal estimations should be made often enough to establish the actual level of the basal reading before iodine is administered. If the rate

is decreased and has a tendency to become elevated after iodine is discontinued, the condition is hyperthyroidism other than a neurosis.

Iodine is not a curative drug and should never be used in exophthalmic goiter except in preparation for operation or in establishing a diagnosis, for the best results come from its use for the first time.

The preparation of the bad risk goiter patient for operation presents a difficult problem. Auricular fibrillation will clear up most of the time with rest in bed—quinidine or digitalis. It persists, however, at times until the final lobectomy. If edema is present with congestive heart failure, it is well to administer ammonium nitrate and repeated injections of a mercurial diuretic. This will restore the patient to a quicker and more comfortable condition than just to depend on rest and digitalis.

If a very active goiter patient should become pregnant or should develop hyperthyroidism in early months of pregnancy it is best to perform a thyroidectomy (I have never seen an abortion result) if the disease should develop after the sixth or seventh month it would be better to give an X-ray treatment or two and perform a thyroidectomy during the second month after delivery.

Since Plummer in 1922 established the great value of Lugol solution in preparation for operation, stage operations have not been so necessary. One can do a lobectomy when a ligation was formerly indicated and a thyroidectomy where a lobectomy was indicated. It must not be forgotten that often the improvement is more apparent than real, and if in doubt, do what you know patient can withstand.

Tetany (fortunately) is due more often to edema than to the actual removal of the parathyroid glands. If tetany does develop, it usually subsides after one or two injections of Lilly's Parathormone, intravenously; thyroid extract, parathyroid extract and calcium may be given also.

If patients develop cyanosis they should be placed immediately in an oxygen tent; if cyanosis does not clear up then a tracheotomy should be done, as hyperthyroid cases do not stand suboxidation.

Early diagnosis, preoperative preparation with iodine, improved technic (trained assistants), special care and stage operations for the poor risk case have made thyroid surgery no more hazardous than any other major operation.



## PSYCHOPATHIC PERSONALITIES AND THE LAW\*

J. P. GILBERT, M.D., Nashville

MAN was not originally a social being. Primitive man was compelled to fight constantly for his right to live, to obtain food and skins for clothing. His shelter was a cave or other protection from the elements afforded by nature. As wild beasts were conquered, man ventured a little farther from his cave and became aware of his neighbors. Soon it was learned that by living in communities and groups it was easier to combat the dangers which constantly imperiled his existence. This grouping or herding together brought about the natural selection of leaders, and the adoption of certain customs, regulations, and, later, laws.

As the task of providing food and shelter became easier, and the fear of loss of life less, more leisure was had for recreation. Man wandered still farther afield and saw the possessions of his more distant fellow man, and became envious of these, whether they were his richer, more fertile fields, his better modes of living, or even the more desirable women of his tribe. Thus, man developed the instinct for war, the desire to increase his dominion and his possessions. Gradually was developed the herd sense, or banding together for protection. His religion at this time was the religion of fear. He watched with fear and trembling lightning, thunder, floods, earthquakes, and volcanic eruptions. The fields, the forests, the bodies of water, the mountains, the very air he breathed, were peopled with evil spirits bent upon his destruction. The sun which smiled upon his fields, the gentle rains which made his crops grow, were the good spirits to whom he must offer obeisance in order to prosper. Thus, man recognized good and evil, the necessity of pleasing not only the good but also the evil spirits. Out of this chaos of fear and struggle for existence has developed civilization.

It was found all through this slow and laborious development that in every tribe

there were those persons who did not conform to the customs of the group, or as we speak of them today, did not have the herd instinct, or were antisocial in their conduct. Even the religion of fear did not hold these personalities in abeyance. Therefore, it became necessary to pass laws, to define crime and set up punishment for transgressions of rights of others. Still this did not relieve the situation. There were still, and are now, with apparently ever increasing numbers, those who do not conform to the group, and who, in spite of religion and knowledge of laws enacted for their punishment, continue to violate the rights of others; those who apparently have no sense of responsibility to their fellow man or to society as a whole. Their crimes may be widely varied from homicide to mere infractions upon decency and moral ethics.

The consideration of psychopathic personalities in relation to the law leads us to the definition of the term to be discussed. There are so many variations from the normal as seen in individuals in every walk of life that we are confronted with the necessity of some definition by which we can at least measure degrees of variance from a certain norm. No one recognizes the existence of a perfect mind. We often hear of some person as having a perfect physique, or as being a perfect specimen of health. He may be of a standard weight for his height, there may be no scars or blemishes upon the outer surface of the body, but should we search diligently enough with our various scientific methods for the study of body chemistry, it is hardly likely that we would not find some abnormality or some variance, from our standards of normal, however slight it may be, that would keep him from scoring perfect.

So it is with the study of the mind. We consider the normal mind as one which has all of its primitive instincts and emotions in such control, at the same time recognizing its shortcomings and idiosyncrasies but compensating for them, thereby being able

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to function properly, make an adjustment socially and industrially, and not manifest antisocial conduct. Thus, we see by this that there is room for considerable variance and still be within the range of normal limits. It is not necessary for us to enumerate the various peculiarities, idiosyncrasies, mental quirks, superstitions, and phobias that the mind may be subject to; yet, if the individual realizes these as such and is able to compensate for them and keep them in abeyance, we can still consider him of normal mind.

It is not the purpose of this paper to discuss in detail the various forms of mental disease or insanity, which have among their symptoms tendencies toward theft, homicide, suicide, and rape, but to give all of our time to the consideration of the mental defectives, or constitutional psychopathic inferiors.

The term insanity means nothing to the psychiatrist or the student of psychology. It is a legal term pure and simple. The legal interpretation is on the basis that an insane person is of an unsound mind to the extent that he is unable to distinguish between right and wrong, to protect himself in his environment, and thereby not held responsible for his acts. We as physicians recognize this as a gross misinterpretation. It is very probable that of the more than four hundred thousand persons confined in our institutions, for the insane in this country that 75 to 80 per cent can distinguish between right and wrong. Yet their lives are so dominated by obsessions, delusions, and hallucinations that they are not able to properly judge the consequences of their acts. The motives prompting their crimes and their own excuses for their acts are so absurd that it is not difficult even for an average jury to recognize these persons as insane. We recognize them as individuals suffering with a mental disease expressed by certain symptoms which class them as medically insane.

The constitutional psychopathic inferior is not recognized as being insane either legally or medically, unless of course he is suffering with a psychosis with delusions and hallucinations to which he is subject, as well as other persons. This class of per-

sonality defect, for descriptive purposes, could better be considered as mental defectives or delinquents, in contradistinction to those who have an intellectual defect, as the mental defectives, more commonly spoken of as feeble-minded. The constitutional psychopath is by no means mentally deficient, but on the other hand many have a high intellectual level, and often even brilliant. However, they seem to be lacking along moral and ethical lines, showing none of the higher aesthetic feelings. They often have no sense of responsibility to society, with no regard for the right of others. They frequently show criminal tendencies, such as murder, or most any offense, forgery, burglary, chronic alcoholism, drug addictions, prostitution, etc. In other words, their conduct is antisocial; they do not conform to the group. Their history as a rule from childhood up shows abnormal conduct, petty thieving as children, uncontrollable temper, and early transgressions against the law. Their lives as a whole are characterized by emotional instability. They wander from one occupation to the other. They are subject to short-lived enthusiasms, beginning many projects with great enthusiasm, suddenly changing their purpose and abandoning their program. A more or less inadequate personality or an inability to succeed at any one occupation characterizes their lives. They frequently make a good impression socially. Often their conflicts with the law are of a minor nature at first, for which they suffer a light penalty. They are constantly filing through our courts and are a great expense to the taxpayers. They are the typical black sheep of the flock. Many a family has spent its fortune in trying to keep an individual of the type out of trouble, not realizing that they are dealing with an incurable defective. Such persons are the victims of heredity and environment. They have, in a great many cases, inherited an emotionally unstable make-up, or they may have acquired their abnormality through infection, as the behavior problems of post-encephalitic children, or through faulty training. Due to their inherent inability to follow any one occupation they succumb readily to the temptations of getting easy money through a life of crime.



Regardless of the etiology in these cases, whether it be an inborn tendency, or acquired through disease, environment, faulty training, or as victims of the depression with resultant idleness, they present a definite problem to society, and compose a large majority of those responsible for our present crime wave. They are not reformed by short or comparatively long prison sentences, where no effort is made toward reformation or to rehabilitate the offender. He is placed in prison for punishment, and punishment alone.

We have defined the term constitutional psychopathic inferiority, and have shown, not by statistics, but by logical reasoning, that such persons would naturally be expected to compose a large group of our criminals. We do not include the criminally insane, for, as we have stated, these individuals are not recognized by alienists or by the law as insane. We then ask the question as to what shall be done with them. We consider them as mental defectives, and feel that the law should treat them as such, whether it be by permanent segregation or by prison reform, whereby the individual's sentence is not for punishment alone, but at least an effort toward reformation or rehabilitation.

The law in this country as regards mental abnormalities, with the exception of New Hampshire, can be summarized as follows: A person is not criminally responsible for an offense if at the time it is committed he is so mentally unsound as to lack: First, knowledge that the act is wrong; Second (in 17 states and District of Columbia), will power enough to resist the impulse to do it. The first part of this rule is the so-called "right and wrong test." The history of this rule will show its antiquity, and also we can readily recognize its absurdity. In 1843, following the trial of Daniel McNaghten for the murder of the secretary to Sir Robert Peel, the House of Lords asked the opinion of all the judges of England upon the law relating to insanity as a defense to crime. The opinion given was that knowledge of right and wrong as to the act charged was the test to be applied. Blackstone is cited even today in American cases, and Blackstone in turn cites as his

authority Lord Hall, who lived in the 1600's and believed that lunatics were affected by changes in the phases of the moon. In 17 states and the District of Columbia has been added the "irresistible impulse test." Of these seventeen our own state is not of the number. Certainly the constitutional psychopath cannot be measured by these tests. It is possible that if his life has been characterized by such overwhelming evidence of lack of emotional control, he might be able to be excused under the irresistible impulse test, but this is not often probable.

The individual we have described is assuredly able to distinguish between right and wrong. We can see that this far the law as it stands is not of much benefit in the solution of our problem. In my opinion there are two states in the Union that have laws which are well adapted to solve the problem for which we are urging a solution. The law of Massachusetts requires that all of a certain enumerated class of defendants, before trial, must be given a routine mental examination by experts of the Department of Mental Diseases. The law also applies to all persons indicted for a capital offense and all persons indicted for any other offense who are known to have been previously indicted more than once, or to have been convicted of a felony. Massachusetts was also the first state to recognize the constitutional psychopath or defective delinquent legally in 1911. If their crimes were not punishable by death or life imprisonment and they were not considered insane or feeble-minded, they were committed as defective delinquents. The first institution for the separate confinement and care of these cases was established at Nanpoch, N. Y., in 1921. The Baum law of New York also provides for life imprisonment upon conviction of the fourth offense.

To avoid the heretofore occasionally just, but more often unjust, criticism of alienists employed by the defense of criminals upon the plea of insanity, it is recommended that we have the adoption of laws whereby the courts will be permitted to appoint a board composed of psychiatrists to examine all cases which are obviously mentally abnormal, or who are recidivists before the courts. Let me pause here to pay tribute to the work

done by Dr. W. S. Farmer, superintendent of Central State Hospital, Nashville, Tenn., and his staff in the examination of criminal cases to the extent of more than 515 during his period of service. His work has been of inestimable value to the courts of Middle Tennessee, and has been accomplished without additional expense to the state.

In conclusion, I will state that in the consideration of offenders whose crimes are not punishable by death or by life imprisonment, and who can be shown by their past lives to be constitutional psychopathic inferior or defective delinquents, and who are not insane or feeble-minded, it is vitally important that we have revision of our laws, with the adoption of such as those operating in Massachusetts and New York. And, as stated before, to obviate the heretofore criticism of alienists employed by attorneys for the defendants, it is also important to have the court appoint a psychiatrist or board of psychiatry for the examination of all persons indicted for a capital offense, or who have before been convicted of a felony.

#### DISCUSSION

DR. W. S. FARMER (Nashville): From a medical, from a legal, from a sociological, and from a psychiatric standpoint, Dr. Gilbert has brought a very important subject before us. All we have got to do is to pick up the papers in this state or any other state and see what the ex-convicts of our country are doing. The outside world calls these people degenerates. We are more charitable; we call them constitutional inferiors. They differ from insanity in the fact that they have an inferiority complex that is a malformation, and insanity is due to disease.

I examined numbers of them years ago and explained to the courts that they had sense enough to get into trouble, but not sense enough to stay out of trouble. Their trouble is along the ethical and moral side. As Dr. Gilbert has expressed in his paper, frequently they are intellectually bright,

but they seem morally blind. Experience does not teach them anything. They are intolerant of advice, regardless of discipline, and continually at war with society.

Some people think that the chief object of a psychiatrist is to get people declared insane when they get in trouble. Not so. We have the same objectives that other people have in the prevention of disease and in the prevention of crime, and our viewpoint in regard to these people is much more drastic than the law prescribes. When the state takes charge of a man of this type who has been committing crime, we believe in indefinite sentences. We do not believe that a man should serve a fixed sentence, then be turned out on the public to repeat the same or a worse crime in the future. I have examined numbers of them that had been in penitentiaries two, three, four, five, and six times.

The main thing about this type of individual when he starts out on a career of crime is that you cannot reform him by punishment any more than you can change blue eyes to black eyes. I have examined a number of them, especially automobile thieves, and I have asked them, "Why do you steal?"

Their reply frequently is, "I do not know, doctor. I will be walking along the street and see an idle car; I will get in and drive off, and I may be gone an hour or two or a day or two or a month or so, and the owner will want it before I get back." That has occurred to me on numbers of different occasions, and it is hard for the public to realize that a man who knows right from wrong has a defect of this type, but there are such individuals, and the best definition that I know for a constitutional inferior of criminal tendencies is that the spark plug of ethics and morals fails to fire properly and at the right time, because the man has got no spark plug of ethics and morals. In other words, as Dr. Gilbert has said, the defect is always along the ethical side. We believe that when the State of Tennessee or any other state takes charge of men of this type, even though they have committed such minor crimes as larceny and forgery, they ought to be permanently segregated.

This, to my mind, is one of the most important subjects that has been brought before this Society, and I want to thank Dr. Gilbert for his presentation.



## SOME ASPECTS OF OTOSCLEROSIS\*

HENRY K. CUNNINGHAM, M.D., Knoxville

THE study of this rather obscure and distressing condition has probably extended into as many fields as any pathological condition of the human body, and one must admit that we seem to be "up a tree," so to speak, in doing anything about it.

Personally it has always been a rather fascinating subject, but always discouraging from a therapeutic and etiological standpoint.

While in Vienna a few years ago we had the pleasure of hearing Prof. Dr. H. Neumann on this subject, and he emphasized the fact that this condition is not an ear disease, but a constitutional condition.

Polizer, in 1892, discovered that there is some embryonal difference in the bone formation around the oval window.

In otosclerosis we note that the cartilage around the oval windows is affected and new bone grows around the stapes articulation.

A fairly typical case is represented as follows: A white man of twenty-one years was referred to me complaining of progressive loss of hearing. He thinks that an attack of influenza five or six years ago aggravated the condition. He gave an indefinite family history as regards hearing impairment. There was no history of otitis media or any inflammatory disease of nose or throat. He complained of the tinnitus, which was constant. There was moderate *Parcusis Willisii* at times.

Functional examination showed the Bezold triad of elevation of lower tone limit, prolonged bone conduction and a negative Rinne.

Examination of ears showed nothing typical. Nose showed a moderately deviated septum with a spur on left side with no obstruction. Throat showed effects of a very poor tonsilectomy with several pieces left in. Wassermann negative. I put him

through the usual therapeutic measures, such as tubal inflation, nose tampons, heat lamp, etc. The usual result was obtained, namely, little or no improvement.

I finally sent him to a surgical supply house for mechanical help.

This case is quoted because it seems to be fairly representative of the condition that we are up against in dealing with deafness of this type.

This patient was very appreciative, and I believe he still respects me and does not go around telling everyone what a poor otologist he thinks I am. You all know that some of these cases will condemn you to everyone and state how you made them worse instead of helping them. These latter cases will certainly give you plenty of adverse publicity.

Otosclerosis is defined as a new osseous formation affecting primarily the bony capsule of the labyrinth and is characterized by progressive deafness, usually bilateral, severe tinnitus, normal drum membranes, patent eustachian tubes, yet demonstrating loss of hearing for lower musical tones, prolonged bone conduction and a negative Rinne or Bezold's triad, as the three last named symptoms are called.

The best known theories as to its nature as described by Cahill are as follows:

- (1) Degeneration of otocyst causing abnormal growth of labyrinth tissue.
- (2) Abnormal continuance of growth of petrous bone, due to lack of vitamins during embryonic growth or early childhood.
- (3) Chronic inflammatory process.
- (4) Toxemia, circulatory defects, aseptic infarcts or anemia.
- (5) Nonmalignant congenital new growth.
- (6) Endocrine disturbance.
- (7) As an existing factor might be mentioned female disturbances of adolescence or pregnancy.

The chief symptoms are as follows: Progressive deafness, tinnitus and *Parcusis Willisii*. Vertigo and pressure or pain in

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the depth of the ear may be present. Some authorities state that the deafness may be unilateral, but Neumann states very definitely that if it is unilateral you can rule out otosclerosis.

The deafness is steadily progressive, and you can notice it increase as patient continues to come to you. The deafness may, on the other hand, appear to lessen for periods and the patient will feel encouraged. Sometimes it will be total for a short time and your patient will be in the depths of despair only to feel more cheerful when hearing seems to improve.

Tinnitus.—The head noises may prove even more disturbing than the loss of hearing and may precede it by months. They are present in about eighty per cent of the cases.

Paracusis Willisii.—This ability to hear conversation better in a noise like that on a train is constantly present in stapes ankylosis.

Vertigo is present in about ten per cent of the cases and may be due to small otosclerotic foci of the semicircular canals.

The essential pathological condition is found in the absorption of the normal bone of labyrinthine capsule and its replacement by a new type of bone formation.

Professor Neumann and others describe the condition as one resembling red plaques in posterior drum membrane. This is due to new bone formation with many new blood vessels. Of course, the plaques are on the medial wall of the tympanum and not on drum. Cahill describes four cycles of bone changes and states that all four changes may take place simultaneously in different parts of the affected area.

A family history of progressive nonsuppurative deafness is a very important diagnostic factor.

Cahill mentions five types:

(1) Otosclerosis with stapes ankylosis.

In this type you have a history of progressive loss of hearing with tinnitus of insidious onset in early adult life, a practically normal drum membrane, patent eustachian tubes and Bezold triad.

(2) Otosclerosis with stapes ankylosis and nerve involvement.

As the new bone penetrates the capsular

wall there is a decided lowering of the upper tone limit. The tinnitus is increased.

(3) Otosclerosis with primary nerve deafness.

This type is suggested when a young adult of an otosclerotic family group becomes deafened without apparent cause.

Onset may be insidious or abrupt.

The audiometer reading will show pure nerve involvement.

(4) Otosclerosis with primary cochlea involvement.

In a case of pure nerve deafness this type would present an increase in bone conduction and a raising of the low limit.

(5) Otosclerosis with primary vestibular involvement. You get a vertigo without apparent cause, and as a later development, nerve deafness in this type.

Neumann mentions two forms:

(1) Benign form, in which you get few labyrinthine symptoms and many ear symptoms. This is a slow process and may go for twenty to thirty years. There is a progressive slow loss of hearing.

(2) Malignant form. Rapid loss of hearing and labyrinth involvement. The latter would suggest a thorough laboratory examination for syphilis, as mentioned by Kerrison.

The otologist should be guarded in his diagnosis of this condition and should rule out everything else before pronouncing it otosclerosis. Neumann states that otosclerosis is a rare disease and that many cases are wrongly diagnosed.

In Vienna they find only a few specimens at autopsy showing this condition, he states.

This question presents itself to each of us when we have a case of this kind. What are we going to tell the patient and how are we going to treat him? These patients are very sensitive and very easily discouraged, and we must be guarded in our statements to them.

The most hopeful prognosis belongs to those cases in which the disease develops late in life, or the symptoms are of moderate grade. Such a case may be so gradual as to bring the patient to old age without disabling deafness.

The opinion expressed by Whiting, that



profound deafness is always due to labyrinthine or nerve disease is a belief probably subconsciously held by most otologists.

Cahill states that the prognosis is very unfavorable when the symptoms appear before the twentieth year, when the loss of hearing is rapid and the tinnitus severe, when the heredity tendency is strong and when the red promontory reflex is marked and when early involvement of the internal ear is present.

Neumann states that the prognosis is not so good if the high tones are diminished.

To tell the patient the truth, even if we regard the case as hopeless, has a harmful effect and will plunge him into the depths of despair.

The disease appears to be an ossification anomaly. The onset of this condition must take place at least five or ten years before symptoms develop. Probably a latent, if not an active, state of the disease is present at birth. The importance to an expectant mother and offspring as to diet and calcium is obvious. Children in an otosclerotic family should have plenty of cod liver oil, green vegetables, milk and sunlight. Whether young women with this condition should be advised of the dangers of marriage and its inherited tendencies is a matter which should be worked out in each individual case. Informing some women would tend to depress them, while others would take the advice sensibly.

Neumann states quite frankly that anything you do might give some relief and raise their spirits temporarily, but he is very conservative in his opinion as to permanent relief or cure. He says: "Do not have your patients with this disease come to you very often, and try to cheer them up as much as possible."

Cahill states that local therapy, unless the condition is complicated by middle-ear catarrh, is useless.

"The improvement obtained at times by the use of the X-ray, vaccines, lights and lamps is due to their quieting action on the lymphoid tissues about eustachian tube rather than any effect on the otosclerotic foci," he further states.

Kerrison says: "If we accept Siebenmann's theory that the disease is simply an abnormal stage of development, all treat-

ment seems useless. If we agree with Gray that the disease may be in some degree dependent upon depressed systemic conditions giving rise to anemia, the prospect seems more favorable."

This author goes on to state that in otosclerosis without evidence of tympanic disease he can see no possible influence which local therapeutic measures can exert upon the progress of the lesion.

Cahill states that any infection tends to activate the process, and hence tonsilectomy and adenoidectomy must be considered on the slightest provocation. He then goes on to state that no hard-of-hearing patient is quite as deaf as the hearing tests indicate, unless total deafness is present. Suppression or inattention deafness is always present in addition to organic loss of hearing. It is on these patients, grasping at a straw, so to speak, that the charlatan and the quack reap a rich money harvest by raising their hopes by false statements and pseudoscientific methods of treatment.

The endocrine side of this problem should be thoroughly worked out in conjunction with the internist and the endocrinologist. The thyroid and pituitary should be thoroughly examined as well as the ovarian and adrenal functions.

The patient should be treated symptomatically in regard to his blood picture, nervous system and general condition.

Sedatives must be used for the tinnitus, which is sometimes so severe as to drive patients insane.

The various mechanical hearing devices must be looked into, and lip reading may have to be resorted to in advance cases.

## SUMMARY

(1) In the light of our present knowledge, otosclerosis is probably a local manifestation of a general systemic dysfunction.

(2) Heredity appears to have a certain definite bearing on this condition.

(3) The fact that there are so many theories as to its causation and so many methods of treatment plainly indicates that there is a great deal yet to be learned about this disease.

(4) The otologist should be guarded in diagnosing this disease and should make an

exhaustive study of a case before pronouncing it otosclerosis.

(5) Present therapeutic measures seem unsatisfactory as to ultimate cure, but symptomatic treatment adds materially to the physical and mental welfare of the patient.

#### DISCUSSION

DR. D. H. ANTHONY (Memphis): I have read a great many articles on otosclerosis in textbooks and magazine articles, and the old and new practically all agree on all the possibilities of the cause, diagnosis, symptomatology, prognosis, prophylaxis, and treatment. To my mind, Cahill, which Dr. Cunningham has mentioned several times in his paper, has written the best article on otosclerosis. The reason I say this is that he has classified otosclerosis in five types, as Dr. Cunningham has mentioned. If one does not keep these five types in mind while he is making the differential diagnosis between otosclerosis and all the other forms of chronic internal ear affections, he will many times overlook an early otosclerosis. I try to keep in mind to differentiate between otosclerosis and acute or chronic middle-ear affections, acute or chronic eustachian tube congestion, and senile deafness. I believe that if you will think of these points in every deaf patient who consults you, in a great percentage of times you can satisfy yourself and the patient that you have correctly typed his deafness.

For many years I have made a routine functional test on every case of chronic affection of the ear that has consulted me; that is, I always make a hearing test for voice, whisper, watch, low and high tone, Rinne, Galton's whistle and accumulator. Every patient with a unilaterally negative Rinne, if the ear symptoms have occurred recently, or if the negative Rinne is bilateral, rules out otosclerosis. Of course, I make sure there is no physical defects of the drum and that the eustachian tube is patent before I render an opinion that the deafness is otosclerosis or something else.

An extensive investigation, begun with a grant from the otosclerosis committee of the American Otological Society and completed in the Department of Genetics, Carnegie Institution of Washington, was carried out by C. B. Davenport, B. L. Milles, and L. B. Frink.

In 1933, they stated that from the investigation that the petrous portion of the temporal bone, which contains the otic capsule, has a particularly complicated embryologic history, so that any disturbances or imbalance of the osteogenic function would be especially liable to affect the otic capsule. Normally the osteogenic processes are fairly well finished at puberty. In the otosclerotic person, on the other hand, there seems to be a revival, at a late stage, of the processes by which fibrous connective tissue and cartilage became transformed into bone, so that membranes like that surrounding the stapes become ossified, and a general hyperostosis of the wall of the vestibule and sometimes of other parts of the temporal bone

occurs. The abnormal osteogenic processes may, indeed, show themselves in infancy and are probably operating during the embryonic period. When other parts of the body are affected, a tendency for brittle bones appears.

The incidence of otosclerosis in the general population is uncertain. The authors roughly estimate it to be around 0.2 per cent, but their method of arriving at this per cent is indirect and open to wide limits of error.

The original data of this investigation consisted of approximately sixty families studied in part by house-to-house visits of trained eugenic workers who were also taught to carry out the diagnostic tuning fork tests (Rinne, Schwabach, Weber, lower and higher limits), and partly by correspondence. Using this data, along with such pedigrees from the literature as seemed sufficiently extensive and reliable, the following facts were demonstrated:

When both parents are otosclerotic, nearly all their daughters are otosclerotic or have a hardness of hearing of some type (one exception in a case from the literature). About two-thirds of the sons are otosclerotic. When the mother only is affected, the proportion of affected sons and daughters is about the same. When the father only is affected, the daughters are affected about 50 per cent more frequently than the sons. When neither parent is affected, the two sexes are equally affected.

Approximately twice as many females are affected with otosclerosis, but other types of hardness of hearing affect the sexes equally.

Two pairs of identical twins suffering from progressive deafness were studied by G. Shambaugh, Jr., and G. Shambaugh. The first were women, aged 31, with progressive deafness since the age of 17. Hearing tests showed an almost identical defect in each, with the tuning fork reactions of primary nerve deafness. The second pair were men, aged 69, with progressive deafness since the age of 60. Here also the audiogram was practically identical in each, and the tuning fork tests showed the reactions of primary nerve deafness. The deafness in the first pair was possibly due to the labyrinthine type of otosclerosis, since the defect ran an identical course in each. The second pair was classified as senile degeneration because of the age of onset.

In the etiology of otosclerosis, heredity is the most important factor known at present. The study of otosclerosis in identical twins may throw important light on the etiologic factors responsible for otosclerosis, for if the disease develops more rapidly or earlier in one of a pair of identical twins, the hereditary factor being exactly equal, we should be able to discover the exciting factors present in the one twin, absent in the other.

A pair of identical twins suffering from otosclerosis is described by F. H. Rodin. The twins were girls, aged 15, who had gradually lost their hearing since the age of 6. Drum membranes were essentially normal in each, while the tuning fork tests showed Bezold's triad. Audiograms showed a practically identical defect in both twins.



## DIABETES INSIPIDUS\*

### ITS TREATMENT WITH THE ORAL ADMINISTRATION OF PITUITARY GLAND

F. THOMAS MITCHELL, M.D., Memphis, and B. T. BENNETT, M.D., Bolivar

AS early as 1682, Thomas Wills recognized a diabetes which was not of the saccharin type, and since then numerous observations have appeared in the literature. It is of extremely rare occurrence. Kahn (1), from the literature, found 80 cases in 255,542 hospital admissions, and Rowntree (2) found only 113 cases in over 800,000 admissions at the Mayo Clinic.

#### ETIOLOGY

Diabetes insipidus is more frequent in childhood than in adult life. It is characterized by polydipsia, the taking of large amounts of water, and polyuria. The urine passed is of low specific gravity and contains neither sugar, albumin, nor casts. The disease varies in severity from the passing of a moderately increased output of urine to the passing of as much as eleven gallons a day, as reported in one case by Trousseau.

Males are more frequently affected than females. In some of the reported cases a familial tendency for its occurrence has been noted and it is somewhat more frequent in children of those parents who have tuberculosis, syphilis, gout, diabetes mellitus, or albuminuria. It occasionally follows encephalitis, and at times is associated with the Parkinson syndrome.

Diabetes insipidus may accompany tumors of the abdomen, a chronic disease of the intestine, or a luetic affection of the spinal cord. It sometimes follows the infectious diseases, as typhoid fever, scarlet fever, diphtheria, or measles. It has been considered a functional neurosis: Tallquist (3) and Meyer (4) believed it due to an inability of the kidney to concentrate the urine.

Some have tried to determine whether the primary symptom is the polyuria or the extreme thirst which in turn would cause the large urine output. Primary polydip-

sias in the demented have been reported by Schwenkenbecher (5), and Claude Bernard (6) cites cases of primary polyuria in cases of injury to the floor of the fourth ventricle. Polyuria may be produced by stimulation of the third ventricle or of the splanshnic sympathetic which Meyer (4) believes causes a renal vasodilation.

Straus and Frank (7) believed the condition due to a disturbance of the glands of internal secretion, and in 1901 Schafer (8) determined that the injection of an extract of the posterior lobe of the pituitary produced a dilation of the renal arterioles with a dilation of the kidney.

#### SYMPTOMS

The outstanding symptoms of the disease are the voiding of large amounts of urine and an unquenchable thirst, which accounts for the drinking of copious amounts of water. The appetite is usually lost, the mouth is dry, perspiration is lessened, and the skin is dry. Headache, neuralgia, palpitation, flushing of the face or other nervous symptoms may be present.

Metabolic studies are usually negative, and renal function tests show the kidneys to be functioning properly. The blood shows few, if any, chemical changes. The tissues of the body generally are in a state similar to that found in dehydration; they have lost their power to maintain within themselves a normal fluid balance. This last is given as a cause for the extreme thirst.

#### TYPES

Clinically, diabetes insipidus may be divided into two groups: 1. The primary or idiopathic group, including the heredity type, those associated with marked functional or neurotic syndromes, and those of a temporary nature as in pregnancy, and all those not presenting an organic lesion as a cause. It may follow fright, exposure, or alcoholic excess; and, 2. the secondary

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or symptomatic group showing evidence of organic disease of brain, pituitary tumors, with or without Frolich's syndrome or infantilism, cerebral tumors or head injuries—atrophy of the brain, or disease of the sympathetic system. Those cases in which cerebral syphilis causes the polyuria are also here included, as well as those following tuberculosis, actinomycosis, or encephalitis.

#### DIFFERENTIAL DIAGNOSIS

Diabetes insipidus must be differentiated from physiologic polyuria, diabetes mellitus, chronic interstitial nephritis, polycystic kidney, urinary tract infections, hysteria and functional nervous disorders.

Usually the disease runs a prolonged course, occasionally one is rapidly fatal. In the secondary type, naturally, the prognosis depends on the cause. In the primary ones, the prognosis as to life is good; as to cure, poor.

#### TREATMENT

The treatment of the disease is, first, to remove the cause in those where this is determined, as the treatment of an underlying syphilis or the removal of a tumor, where this is possible; and, second, the relief of the symptoms. Formerly, many drugs were advocated for the latter purpose: histamin, valerian, ergot, diuretin, pilocarpin, atropin, and amidopyrin. Herrick (9) has reported a diminution in the urine output following the withdrawal of 5 cc. of spinal fluid by lumbar puncture.

Recently the endocrine treatment of diabetes insipidus has been introduced, marking the first advance of any importance in the therapy of this condition. In 1913, Von der Velden (10) and Farini and Ceccaroni (11) found that injections of posterior lobe pituitary extract lessened the output of urine in normal individuals, and in diabetes insipidus they could with this extract cause a marked concentration of the urine. Bab (12), Barker and Mosenthal (13), and Rosenbaum (14) confirmed these findings. More recently combinations of pituitary extract with insulin or corpus luteum have been used by some. Sulzberger (15) has advised a pituitary extract called "Intermedin," and Trosler (16) has introduced "Fol-

liculin," an ovarian hormone, for use in male patients. "Pitressin," a pituitary extract minus the oxytocic principle, is now being advised.

Because of the discomfort from the hypodermic injection of pituitrin, as well as the occasional development of atrophy of the fat at the site used for the injection, other routes of administration than this have been sought. The oral administration of extracts and fresh glands has been found to be ineffective by many observers, including Barker and Mosenthal (13), Blumgart (17), Rowntree (2), Clyde Moore (18), W. F. Hamilton (19).

The intranasal administration of pituitary extract by Blumgart (20) in 1922 made a more suitable route of introduction open to certain patients. Since then, in France, successful management of several cases has been achieved by having patients snuff powdered posterior lobe extract up the nose. More lately, Smith (21) has introduced the powder with a powder blower.

Reports of the results obtained by the implantation of the pituitary gland of the calf are available, and some in Italy have experimented with Roentgen ray therapy in the region of the hypophysis. These attempts in the main are to do away with the necessity of the frequently repeated injections of pituitrin.

The diet should be high in fat and carbohydrate and low in protein and of a low sodium chloride content.

Sedatives, even opiates, are useful to secure sleep and to lessen thirst.

#### CASE REPORTS

The reason for my attempts to treat diabetes insipidus by the oral administration of pituitary gland, in spite of the numerous statements in the literature that it was without value, came about through the observation some time ago that a patient who was receiving thyroid and pituitary gland to stimulate mental and physical development was relieved of a long-standing nocturnal enuresis while on this therapy. The idea then came that perhaps some effect might be obtained in certain cases of diabetes insipidus by the oral administration



of the pituitary gland. Also this method of administration is useful in Frolich's syndrome, disorders of the skin, abnormal sexual development, and in absent or delayed menstruation. The tablets are given at least one hour before meals so that they may more quickly pass through the stomach.

When these cases presented themselves, therefore, the following experiments were conducted. The first case was a boy (A. D.), admitted to the pediatric service of the Methodist Hospital, at the request of Dr. J. H. Keim of Kennett, Missouri. He had for two or three years been drinking a large amount of water and had been voiding large quantities of urine at frequent intervals. He had lost his appetite and was in poor general condition.

Four months ago he had been diagnosed diabetes mellitus, on one examination of his urine in which it was thought sugar had been detected, and was put on eight units of insulin daily for a short while, from which he nightly went into an insulin shock and recovered with the administration of orange juice.

Two months before admission to the hospital he weighed 45 pounds and was voiding about one gallon of urine, with a specific gravity of less than 1.005, daily, besides wetting the bed at night. Urinalysis done thrice daily for fourteen days failed at any time to show the presence of sugar.

The family history is known as far back as the patient's grandparents, who are living and well. There is no history of diabetes insipidus or mellitus in any of his people, nor any of tuberculosis. His mother and father are living, as well as two sisters, one brother having died at ten months of erysipelas.

His past history is negative except that he had pertussis and measles when three years of age, and smallpox one month ago.

On admission to the hospital, his weight was 40 pounds, having lost five pounds in the last two months. Skin shows scars from recent smallpox. The cervical glands are moderately enlarged. The chest is flat. Heart and lungs are negative. The abdomen is rather large, probably from weak musculature, otherwise negative. The posture

is stooped, with a moderate lordosis. The other systems are negative and neurological examination, including examination of the eye grounds, discloses nothing abnormal.

The urine was negative, except for a specific gravity of 1.001. The blood count was normal. Blood and spinal fluid, Wassermann and Kahn tests, were negative. Blood sugar 0.74 mgms. per 1,000 cc. An X-ray of the sella turcica reveals normal form, size, and contour.

During his 20-day stay in the hospital he ran no fever or had no complaint other than that for which he was admitted. He was allowed out of bed. He had a fair appetite. For three days no treatment was given, during which time he averaged a 24-hour output of 192 ounces of urine.

On the fourth day in the hospital he was put on two tablets posterior pituitary extract daily, and in the next 24 hours his output was 99 ounces. Three days later he was voiding 100 ounces, and the tablets were increased to three per day, which resulted the first day in a urinary output of 80 ounces. Three days later this had fallen to 73 ounces; three days later it was the same; three days later it was 70 ounces; three days later, 73 ounces; three days later, 62 ounces, at about which figure it remained until he left the hospital.

Since this time he has moved, and accurate observation has not been possible, but word from his father states that he has "grown a good bit" and that when the tablets can be gotten he passes much less urine, but when they are discontinued, his symptoms return.

The second case has been under daily observation for a period of months, and more exact data is available. Dr. Bennett, who sent the case to me, has executed the treatment and compiled the reports from which this record is taken. B. C., age 10 years; first seen in December, 1933, has drunk an excessive amount of water since an illness at two and one-half years of age, characterized by vomiting and a collapse, and which left him under par since. He has had the usual childhood diseases with no complications, has been subject to repeated upper respiratory infections, and was operated on

for acute appendicitis last year. In school he has always done well.

The family history is negative as to urinary disease, tuberculosis, or glandular disturbances. Both parents and two sisters are living and normal, none are dead, and there have been no miscarriages.

During the past five years he has at several months intervals voided while asleep. In August of 1933 he began bed wetting frequently and by the first of September it was a nightly occurrence.

In October several urinalyses were made, all with exceptionally low specific gravities. October 16, 1933, a urinalysis of the 24-hour specimen showed a specific gravity of 1.000 with a 2500 cc. output, otherwise negative. At this time the case was diagnosed as diabetes insipidus, however no treatment was instigated. December, 1933, the child developed an acute upper respiratory infection with an accompanying bronchitis. A blood count at this time was as follows: leukocytes 8,000, lymphocytes 33 per cent, monocytes 33 per cent, neutrophils (seg.) 54 per cent, neutrophils band form 6 per cent, malaria negative. The child continued to run a low grade temperature.

Shortly after this the treatment outlined below was begun, since which time he has not wet the bed, his general health has improved, he has had but one cold, and has gained 9 pounds in the 60 days of this observation.

At the beginning of treatment he was voiding 68 to 96 ounces of urine daily and was put on pituitrin (S) .3 to .5 cc. B.I.D. hypodermatically, which in one week reduced his output to about 65 ounces daily, when the pituitrin was increased to .8 cc. twice daily. At the end of one week the output was 41 ounces and the pituitrin was increased to 2 cc. daily in three doses, which reduced the output to 32 ounces by the fourth day, when tablets of whole pituitary gland were given, 2 grains T.I.D. In 4 days the output was back to 60 cc. and the tablets were increased to 8 grains per day. In 9 days the output was 30 ounces, when the dosage was reduced to 6 grains per day. In one week the output had fallen to 18 to 20 ounces per day and the dose was cut down

to 2 grains each day, and finally to 1 grain a day, with an output daily of from 15 to 31 ounces per day. During the latter half of this time his fluid intake has almost doubled his urinary output, which accounts for his rapid gain in weight.

At this point, about one month ago, the treatment was discontinued and up to this time he has had no return of symptoms and he is holding his weight.

### CONCLUSIONS

From the foregoing results it appears evident that at least some results may be expected in certain cases of diabetes insipidus from the oral administration of pituitary gland, and that this method of administration is particularly applicable in the treatment of children in whom both the hypodermic and the intranasal routes are objectionable.

### Case II

December 23, 1933. Subject B. G. Age 9 Years.  
Weight 55 lbs.

FLUID INTAKE, URINE OUTPUT FOR 24 HR. PERIODS  
Pituitary Extract Surgical Hypodermatically

3/10 cc. B.I.D.

	Urine S. G. 1.000	
Dec. 24, '33	Intake .....	79 oz.
	Output .....	68 oz.
Dec. 25, '33	Intake .....	103 oz.
	Output .....	96 oz.
Dec. 26, '33	Intake .....	85 oz.
	Output .....	66 oz.
December 27th,	increased dose to 5 10 cc. B.I.D.	
Dec. 27, '33	Intake .....	76 oz.
	Output .....	67 oz.
Dec. 28, '33	Intake .....	64 oz.
	Output .....	56 oz.
	Urine S. G. 1.005	
Dec. 29, '33	Intake .....	64 oz.
	Output .....	56 oz.
Dec. 30, '33	Intake .....	78 oz.
	Output .....	76 oz.
Dec. 31, '33	Intake .....	69 oz.
	Output .....	65 oz.
December 31st,	increased dose to 12 m. A.M., 10 m. P.M.	
Jan. 1, '34	Intake .....	40 oz.
	Output .....	31 oz.
Jan. 2, '34	Intake .....	38 oz.
	Output .....	34 oz.
Jan. 3, '34	Intake .....	38 oz.
	Output .....	34 oz.
Jan. 4, '34	Intake .....	50 oz.
	Output .....	41 oz.
Jan. 5, '34	Intake .....	50 oz.
	Output .....	45 oz.



Jan. 6, '34 Intake	42 oz.	Output	30 oz.
Output	41 oz.	Urine S. G. 1.021	
January 6th, increased dose to 12 m. A.M., 10 m. noon, 10 m. night		Feb. 2, '34 Intake	44 oz.
Jan. 7, '34 Intake	41 oz.	Output	20 oz.
Output	34 oz.	Feb. 3, '34 Intake	44 oz.
Jan. 8, '34 Intake	42 oz.	Output	18 oz.
Output	38 oz.	February 4th, 1 gr. B.I.D.	
Jan. 9, '34 Intake	40 oz.	Feb. 4, '34 Intake	43 oz.
Output	32 oz.	Output	15 oz.
January 10th, tabloid whole pituitary gland by mouth 2 grs. T.I.D.		Feb. 5, '34 Intake	40 oz.
Weight 63 lbs.		Output	31 oz.
Jan. 10, '34 Intake	50 oz.	Feb. 6, '34 Intake	31 oz.
Output	44 oz.	Output	20 oz.
Jan. 11, '34 Intake	46 oz.	Feb. 7, '34 Intake	52 oz.
Output	42 oz.	Output	22 oz.
Jan. 12, '34 Intake	44 oz.	Feb. 8, '34 Intake	44 oz.
Output	40 oz.	Output	21 oz.
Jan. 13, '34 Intake	46 oz.	Feb. 9, '34 Intake	47 oz.
Output	39 oz.	Output	23 oz.
Jan. 14, '34 Intake	70 oz.	Feb. 10, '34 Intake	38 oz.
Output	60 oz.	Output	30 oz.
January 15th, 3 grs. A. M., 2 grs. noon, 3 grs. night		Acute Resp. Inf. Feb. 11, '34 Intake	14 oz.
Jan. 15, '34 Intake	56 oz.	Output	28 oz.
Output	41 oz.	Feb. 12, '34 Intake	32 oz.
Jan. 16, '34 Intake	42 oz.	Output	18 oz.
Output	40 oz.	Feb. 13, '34 Intake	40 oz.
Jan. 17, '34 Intake	50 oz.	Output	22 oz.
Output	38 oz.	Tabloid 1 gr. B.I.D.	
Jan. 18, '34 Intake	52 oz.	Feb. 14, '34 Intake	35 oz.
Output	36 oz.	Output	25 oz.
Jan. 19, '34 Intake	46 oz.	Feb. 15, '34 Intake	40 oz.
Output	38 oz.	Output	15 oz.
Urine S. G. 1.015		Feb. 16, '34 Intake	46 oz.
Jan. 20, '34 Intake	44 oz.	Output	19 oz.
Output	35 oz.	Weight 62 lbs.	
Jan. 21, '34 Intake	42 oz.	Feb. 17, '34 Intake	39 oz.
Output	42 oz.	Output	18 oz.
Jan. 22, '34 Intake	38 oz.	Feb. 18, '34 Intake	31 oz.
Output	29 oz.	Output	23 oz.
Jan. 23, '34 Intake	38 oz.	Feb. 19, '34 Intake	46 oz.
Output	30 oz.	Output	34 oz.
January 24th, back to 2 grs. T.I.D.		Feb. 20, '34 Intake	32 oz.
Jan. 24, '34 Intake	40 oz.	Output	31 oz.
Output	22 oz.	Feb. 21, '34 Intake	35 oz.
Jan. 25, '34 Intake	37 oz.	Output	27 oz.
Output	22 oz.	Feb. 22, '34 Intake	40 oz.
Jan. 26, '34 Intake	40 oz.	Output	29 oz.
Output	25 oz.	Urine S. G. 1.027	
Jan. 27, '34 Intake	40 oz.	Treatment discontinued, weight 64 lbs.	
Output	39 oz.		
Jan. 28, '34 Intake	40 oz.		
Output	30 oz.		
Jan. 29, '34 Intake	34 oz.		
Output	34 oz.		
Jan. 30, '34 Intake	34 oz.		
Output	29 oz.		
Jan. 31, '34 Intake	34 oz.		
Output	16 oz.		
Tabloid 2 grs. B.I.D.			
Weight 64 lbs.			
Feb. 1, '34 Intake	36 oz.		

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## CONGENITAL ANOMALY AND EXTRAHEPATIC DUCTS OF THE GALL BLADDER\*

C. V. CROSWELL, M.D., Memphis

**A**FTER hearing the title of this paper, many of you will be prone to think that a congenital absence of the gall bladder and extrahepatic ducts may be of great interest to the pathologist. You may not be able to see how a developmental anomaly that causes death of the infant within a few days or months after birth can be of particular interest to the pediatrician or general practitioner.

I want to assure you that this condition is not a pathological curiosity but an unusual occurrence with which the pediatrician and general practitioner may be confronted.

In an effort to emphasize the importance of keeping this condition in mind and recognizing it early a case will be reported that is now under my care.

### REPORT OF CASE

**History:** B. B., a white girl, age 4 months, was first brought to me at the age of seven weeks. She was the first child of young, healthy parents. The delivery was normal at full term. Jaundice was noticed at birth, but the stools were green for the first five days and then became white and greasy. The baby began vomiting, and the stools became loose and slightly blood-streaked. The urine was dark yellow in color.

The mother did not give sufficient milk, so a formula of diluted cow's milk and Karo corn syrup was substituted. Hospitalization was advised for the purpose of regulating the feedings and to improve the nutrition if possible. She was admitted to the Methodist Hospital, January 19, 1934, at the age of eight weeks. The examination at this time showed a fairly well developed but undernourished anemic infant that was very definitely jaundiced. The examination of the head, neck, and thorax was negative. The abdomen was rounded but slightly flac-

cid. The liver was enlarged, reaching two finger breadths below the costal margin. The spleen was about twice the normal size. The stools were white, greasy, and free from bile on all occasions. The urine was golden yellow and showed bile pigments at each examination. The Van den Berg test was reported positive delayed direct reaction. Blood culture was negative. Fragility test showed hemolysis beginning at .4 per cent dilution NaCl and complete at .25 per cent dilution. Icterus index increased from 56 to 107 between February 2 and February 20, an interval of eighteen days. Total white cell count was 12,750. Lymphocytes were 22 per cent, large mononuclears 3 per cent, and polymorphonuclears 74 per cent. The total red cell count was 2,530,000, with slight anisocytosis and poikilocytosis. The hemoglobin was 75 per cent. The bleeding time was two and one-half minutes, and the coagulation time was four minutes. The blood Wassermann was negative.

The child steadily grew worse and the treatment being administered was of no benefit.

A provisional diagnosis of congenital malformation of the biliary ducts was made. An operation was advised when twelve weeks of age. The patient was operated upon by Dr. Casa Collier. The findings were as follows: (1) A small amount of bile-stained fluid in the peritoneal cavity. (2) The abdominal viscerae were bile-stained. (3) The liver was enlarged, the edges rounded, and cirrhotic. (4) Marked enlargement of the spleen. In the gall bladder fossa there was a small amount of fibrous tissue. No gall bladder or biliary ducts were found. A very small strand of fibrous tissue extended downward to the common duct area. A careful dissection, which exposed the hepatic artery and vein to the liver, failed to reveal any rudimentary structure that could be interpreted as being the duct.

\*Read before the Tennessee State Pediatric Association, Chattanooga, April 9, 1934.

Since there was no opportunity of correcting the condition surgically, the abdomen was closed. The patient made an uneventful recovery from the operation. She has steadily lost in weight since. Blood transfusions and supportive measures have purposely been avoided, since the condition is considered absolutely hopeless. It is just a matter of time until the child expires, regardless of the therapeutic measures employed. The jaundice is progressing rapidly and the gastrointestinal symptoms have persisted.

This case illustrates one point I am anxious to emphasize: that is, that the condition must be recognized early by the attending physician. In possibly more than fifty per cent of anomalous conditions of biliary tract, early recognition and competent surgical treatment may result in a restoration of function.

Chyne in 1801 in his "Essays on Diseases of Children" was probably the first to recognize and record the importance of malformation of the extrahepatic bile ducts. Ninety-one years later, Thompson (1) reported one case and collected forty-nine others from the literature. Since that time case reports have appeared in the literature more frequently. Up to the present time we have been able to find a total number of one hundred and seventy-eight cases.

The average age at which death occurred in the cases that were not operated upon or not amenable to surgical treatment is about seven months.

Ladd, in 1928, reported twenty cases of congenital atresia with stenosis of the bile ducts, eleven of which were subjected to operation; eight of these presenting conditions amenable to surgical correction.

In four of the cases reported by Cole (13) and Deaver (14), a complete absence of the extrahepatic bile ducts was noted in one case.

**Etiology:** Opinion is divided as to the cause of this condition. Syphilis has been found associated with the condition, and some think it is an important factor. Vig-hold (10) stated that syphilis never causes this condition. Ladd (11) says a catarrhal condition within the ducts themselves can

possibly be the cause. However, it cannot account for the complete atresias or the absence of a part of the ducts. One or two cases have evidenced that fetal peritonitis might be considered in the etiology, although Cole (13) says its importance is exaggerated and their cause advanced is a congenital malformation, such as defects in the vascular supply. Perhaps the most acceptable theory of the formation of the occlusions is that offered by Bland-Sutton (Cole) (13), who claimed that they occur at the site of outstanding events in the embryologic development.

**Symptoms:** Jaundice is by far the most frequent and outstanding symptom. It is usually present at birth or develops soon after. In some cases it has developed as late as a month after birth. When this happens, I am inclined to think that the atresia was not complete at birth. Other gastrointestinal symptoms, such as refusing nourishment, diarrhea, distention and colic follow. The child fails to gain weight and the jaundice increases. The veins over the lower thorax and upper abdomen are more visible, and nosebleed may be a frequent and troublesome symptom. Purpuric areas over the body are frequent. Stools are white, greasy, and free of bile on all occasions. The urine is highly colored and stains the napkins a golden yellow. Secondary anemia of a progressive nature develops early. The liver and spleen are always enlarged.

**Diagnosis:** It is very important that a diagnosis be made as early as possible, since statistics indicate that the mortality increases rapidly with the age of the condition, as in many other uncommon ailments, the most important thing is to bear in mind its possibility. In other words, the problem is not so perplexing if we try to fit this diagnosis on the case. The history, symptoms, signs, physical examinations, and laboratory tests serve to make the diagnosis. The Van den Berg test may aid in making the diagnosis. Syphilis must be ruled out, and this can be done by serological examination of the child and parents; septicemia, by negative blood cultures and absence of fever; icterus gravis neonatorum by blood



examination; hemolytic jaundice of hereditary origin by the fragility test.

Treatment: Surgery is indicated as soon as a diagnosis is made, if the infant's condition will permit. It must be remembered that the bleeding may be a difficult problem with which to cope. An effort is made to anastomose the part of the ducts or gall bladder that is developed to the intestine, to permit passage of the bile. Intestinal antiseptics, that will not prove too irritating, should be employed. Bile salts by mouth may help to regulate digestion and assimilation of food. Diet should supply the vitamins and contain as little fats as possible.

Summary: (1) Congenital absence of the bile ducts is a condition that exists more frequently than is recognized. (2) It is of interest and importance to the pediatrician and general practitioner because they are called upon to diagnose and treat infants suffering from this malformation. (3) A case of congenital absence of the gall bladder and extrahepatic ducts is reported. (4) An earnest plea is made for early recognition of these conditions and the institution of immediate and competent surgical treatment.

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H. H. SHOULDERS, M.D., Editor and Secretary

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## EDITORIAL

### A DANGER TO CRIPPLED CHILDREN

Under the above heading an editorial appeared in the July issue of THE JOURNAL concerning a survey which was being conducted under the sponsorship of the American Legion and financed out of federal relief funds.

It is common knowledge that various groups and individuals have sponsored activities which are designated *projects* for the purpose of obtaining federal relief funds for the *employment of individuals*.

The officers of the American Legion of the Department of Tennessee were approached and requested to sponsor a survey of crippled children to be financed with federal funds.

The State Commander of the American Legion took exceptions to the editorial and wrote a critical letter which was sent to many doctors and published in the Tennessee Legionnaire.

The Commander of the American Legion obviously misconstrued the editorial in every way it possibly could be misconstrued. For example, an observation was made to the effect that cripples often adjust themselves to their handicaps and succeed in spite of their handicaps. This was a simple statement of a simple truth. Mrs. Roosevelt made the same observation concerning her husband, the President, in a speech at Norris Dam, Tennessee, some weeks ago. It was never made as an argument against any sensible logical plan of management aimed at the improvement of the conditions of the cripples. It certainly does not express *opposition* to actual benefits to cripples.

The Commander construed the statement to mean that the author of the editorial was opposed to any aid to the cripples.

The statement actually is a compliment to the cripples, which compliment a majority of them thoroughly deserve.

Groups and organizations who have been carrying out well-formulated plans for the improvement of cripples were also complimented highly in the editorial.

These statements should suffice to show that the policy of THE JOURNAL is not opposed to any well-planned and well-executed work aimed at the improvement of the condition of cripples. THE JOURNAL is opposed to ill-advised and improperly-executed plans which have disturbing effects on the cripples and harmful effects on those engaged in the actual work of improving the conditions of cripples.

It is necessary now to cite some things that have happened. Complaints were received from many sources throughout the state from members of the medical profession concerning the conduct of the survey. One communication from Sevier County was to the effect that a doctor in Sevier County who is not even a graduate of a medical school was selected to conduct the examinations of the children.

There are numerous instances in Nashville in which children under the care of competent orthopedic surgeons were ordered before the doctors appointed to make the survey. The children in the Junior League Home in Nashville, already under treatment, were ordered to appear in the survey clinic for an examination.

We have information on good authority that about two hundred forty children were examined in Davidson County—that many of these could not be benefited by treatment and that all of them, except two, who could be benefited by treatment, had received adequate treatment or were under treatment at the time of the examination. The two children in need of treatment but not getting it had their parents alone to blame for their plight because free treatment was available to them. It was a simple case of *parental neglect* in both cases.

Newspapers have carried stories of these



clinics to the effect that a large number of those ordered to appear did not appear. The classification of the cripples is bound to be inaccurate for the reason that a proper diagnosis and classification could not be made by the sort of examinations conducted.

Certainly the project resolves itself very largely into a *project of cataloging cripples*.

There are many doctors in Tennessee whose life work is that of giving care to crippled children, several of them are near the headquarters of the Legion, and an investigation shows that these were not consulted concerning the plans and policies of this *project*.

The Commander in his communication states: "*This project was never intended for purposes other than education and as a case finding or classification program.*"

It might be appropriate to ask someone to point out the good, if any, that possibly can come to cripples already under appropriate treatment.

Another development is that parents of crippled children have been left with the impression that the children are to receive free treatment *this fall*. Regardless of the intent that result has come about.

A child in need of treatment in Nashville was taken from a doctor's office by the father to *wait until free treatment can be had this fall*. The parents were left with the impression that free treatment would be had regardless of the economic conditions of the parents.

At the time of the writing of the editorial there was a rumor to the effect that an effort was being made to get the American Legion to sponsor the purchase of some abandoned school buildings in Middle Tennessee to be used as a hospital for crippled children.

Those who handle crippled children know full well that they should be handled properly from a psychologic standpoint, as well as from an orthopedic standpoint. If they are handled improperly from a psychologic standpoint an almost irreparable injury to them is done. Every one who has worked with crippled children knows that

many of them are sensitive concerning their handicaps. However cruel the fate which made them cripples, it would still be a cruel fate that would permit them to be handled improperly when the proper care is available.

Then some of the harm that has already resulted from the *survey* is, first, the *compilation of inaccurate information* concerning crippled children. Second, the relationship between the doctors and their private patients have been disturbed. There has been implanted some degree of lack of confidence in the minds of those already under treatment and the impression has been created that free treatment awaits them shortly. Third, institutions already administering to the care of cripples have been disturbed and their experience ignored. Fourth, doctors who are giving free treatment to the indigent are now wondering why it is that salaries can be paid people for a *survey* while these doctors administer relief and treatment free of charge.

Something should be said concerning the two cripples found in Nashville without treatment, and in need of it, whose parents are entirely to blame. It is common knowledge that the owner of a horse can be prosecuted for his abuse of that horse. Would it not be appropriate for some of the parents of neglected children to receive the proper treatment for the crime of parental neglect, or is it possible that the crime of parental neglect is to be applauded and that the natural logical responsibility of the parents is to be transferred to the taxpayers?

There are many movements in America today aimed at the establishment of communism which are paraded for the moment under the disguise of laudable charity movements.

Commander Hayes of the American Legion made reference to this fact just a few days ago.

It is *not asserted* that the membership of the American Legion would engage in such a movement, but it is possible that they may be deceived.

There is an increasing number of people who wish to win their way to personal and

political popularity by the easy method of advocating that the state take over the personal duties and responsibilities which properly belong to individuals. Crippled children make an excellent vehicle for such a purpose.

It may be said that this survey of crippled children has no such purpose. It is hoped such a statement is true. It might be asked however—Who is to be educated and how?

The medical profession is thoroughly aware of a definite movement to establish communism in medicine in America. The movement has the backing of some *wealthy foundations* and, in some instances, *state officials*.

By the use of propaganda and *misinformation* paraded as education, a sentiment favorable to such a movement is created and promoted. That has been happening.

"Not all is gold that glitters." Not all movements alleged to be for charity purposes are without dangers.

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#### SOMETHING TO THINK ABOUT

A United Press news item appeared in the Nashville Banner under date of August 6, 1934, containing utterances made by Mr. Merwin K. Hart, President of the New York State Economic Council, concerning the political power of the population on relief rolls. Among other things, he said: "If the millions now receiving relief should organize as some have already done, and wield the power of organized voters they could hamstring any effort to bring about economic recovery."

Just a few days ago figures were published to show that over thirteen per cent of the population of Tennessee is on federal relief rolls, or approximately seventy-five thousand families. If there is an average of two voters to a family there are one hundred fifty thousand voters on relief rolls in Tennessee. If state and federal employees are added to this number the combined vote of the three groups would be overwhelming if exerted together.

Of course there is a large number of people who are receiving benefits from private

charities and from state charities. For example, county poor houses, beneficiaries of community chests, orphanages operated by churches, lodges and other philanthropic groups, etc. When these are added the number is still larger.

Not long ago the Professor Emeritus of Harvard University said: "Heavy taxes mean numerous tax-eaters, that is, voters on the pay rolls of our various governments. The interest of these voters are opposed to government retrenchment or economy. These interested voters may soon, if they do not already, hold the balance of power in our government."

There are numerous accounts of the enormous numbers of people who are anxious to leave their private occupations and get on a government pay roll.

We have made some effort to determine the percentage of our population engaged in occupations essential to our civilization. That is those who are producing goods or rendering services necessary to our civilization. The number so engaged is relatively small, somewhere around twenty-five per cent of the population. Many of these are overworked. They have their anxieties also. This overwork, strain and anxiety is having its effect on the death rate from heart disease and probably on our suicide rate.

It is common knowledge that heart disease is easily the leader as a cause of death in this group of people.

The death rate from suicide in this group of people is alarming. In fact, the death rate from suicide exceeds the death rate from such diseases as smallpox, diphtheria, scarlet fever, poliomyelitis, tuloremia, and rabies combined.

The above statements and observations are recited as things for thinking people to ponder.

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#### A POSSIBLE EXPLANATION

Some time ago we heard a story related to the effect that centuries ago an argument took place between three philosophers on the subject, "Which of the professions has the largest number of members?"



One of them asserted that the medical profession had the largest number. This was disputed by the other two, of course. The one philosopher insisted he would prove his point. He proceeded to do so in the following manner:

He went to his room and bandaged his head and walked out on the street. Each of the persons he met, whom he knew, asked him what was the matter. He told them a story, of course, but each one of them was told the same story. Each of his questioners gave a remedy which each insisted was a certain cure. The philosopher made note of the name and treatment recommended by each. He went back to the other two philosophers and presented them his proof which is to the effect that a majority of people are doctors. He won his point.

There are many people today attempting to deal with purely medical questions.

Even the most learned men of the profession know none too much about the subjects on which some lay people can express the most positive opinions.

## DEATHS

Dr. Gershon Campbell Bryant, Milan; University of Tennessee Medical School, 1903; Age 58; Died July 22.

Dr. J. B. Core, Thompson Station; Vanderbilt University, School of Medicine, Nashville, 1892; Age 64; Died July 12.

## RESOLUTIONS

### DR. G. C. BRYANT

Dr. G. C. Bryant of Milan, Tenn., who died on July 22, 1934, at the age of 58, was one of the outstanding physicians of Gibson county. He first located at Trimble, Tenn., only staying there a short time, then moved to McLemoresville and from there to Milan about ten years ago, where he was living at the time of his death.

He was a devoted and sympathetic hus-

band, father and friend, possessing Christian virtues that but very few have.

Dr. Bryant loved his medical society, its membership and the membership of his profession and faithfully stood by them. Scores of patients will praise him for the good deeds done as physician as well as a man. He never accumulated great wealth, but he did leave behind a good name.

In recognition of his many noble traits of character, we, the Gibson County Medical Society, extend to the family and friends our deepest sympathy. As a society who shall we miss more than Dr. Bryant, who was always present to do his part.

DRS. B. T. BENNETT,  
B. S. PENN,  
T. W. JONES.

### DR. CLARENCE A. COBLEIGH

On July 15, 1934, The Chattanooga and Hamilton County Medical Society lost one of its oldest and valued members in the death of Dr. Clarence A. Cobleigh. Born in Athens, Tenn., 1872, son of Dr. E. A. Cobleigh, who was organizer in 1889 and dean for several years of the old Chattanooga Medical College. Graduated in medicine at the Chattanooga Medical College in 1897 with second honor in a class of 34, and the following year elected member of the faculty as assistant to the Chair of Practice and Clinical Medicine. Honorary member of our Society and Fellow of the Tennessee Medical Association and American Medical Association. He was associated here for a number of years with Dr. Berlin, and was examining physician for the local Army and Navy Recruiting Station, 1907 to 1913. He practiced in Chattanooga except for some years in Florida, until a few months ago, when his health failed.

Few physicians have commanded more respect and confidence of their patients than did Dr. Cobleigh. He was positive in his diagnosis and knew well the action of drugs or remedies to relieve the illness. And when he learned that the Grim Reaper had fastened on him an incurable disease, he dis-

played a most remarkable fortitude and resignation.

Be it, therefore, resolved: That the Chattanooga and Hamilton County Medical Society deeply deplore the passing of Dr. Cobleigh, and be it further resolved, that we extend to his bereaved family our sincere sympathy and condolence, and be it further resolved, that a copy of this preamble and these resolutions be sent to the family of the deceased, a copy spread upon our record book and a copy sent the secretary of the State Medical Society.

#### MEMORIAL COMMITTEE.

D. N. WILLIAMS, *Chairman*,  
J. B. MCGHEE,  
J. W. BRADLEY,  
A. F. EBERT,  
L. P. BROOM.

#### DR. J. BLYTHE CORE

In the death of Dr. J. B. Core, his devoted family, the numerous homes in which he was the beloved family doctor, and the medical profession of the county and state suffered an irreparable loss.

He spent his entire life in the community where he was born and reared, having inherited from his father the professional patronage and the personal esteem and good will of that community.

Being a competent, active, and attentive physician of sound judgment, and of rare personal charm, he constantly added to the sphere of his medical practice, until at the time of his fatal illness he was doing such an extensive and laborious professional work as probably overtaxed his physical strength.

Of most pleasing personality, quiet, genial, kind-hearted, and a lover of his fellow men, he was easily the "Abou Ben Adhem" of a profession noted for its humanitarianism. He enjoyed to an unusual degree the confidence and good will of his professional associates, and no physician ever had more loyal and devoted patients and friends.

He was a charter member of the Williamson County Medical Association, and con-

tinued his membership and his interest in both the county and state medical associations until the end.

We deeply deplore his loss and extend to his family and to the community, which he had served so faithfully and well, our profound sympathy in their great bereavement.

Resolved that a copy of these resolutions be spread upon the minutes of the society, and a copy furnished the family.

J. W. GREER,  
W. C. WILLIAMS,  
R. H. HUTCHINSON.

#### DR. DAN GERMAN, JR.

The members of the Williamson County Medical Society loved Dan German, Jr., as one of their own.

Having known him since childhood, they had watched with interest and pleasure his fine record through Vanderbilt Medical School, and his subsequent service as interne in Cincinnati General Hospital, and as resident in pediatrics at Vanderbilt Hospital; and when he came to Franklin to practice medicine, just a short year ago, and became a member of our medical society, he was received with open arms.

His quiet manner and gentle smile further endeared him to his medical associates, as well as to his many loyal patients, and we deeply deplore his untimely death.

Resolved, first, that we extend to his devoted father, mother, and sister our heartfelt sympathy in their sudden and great bereavement; second, that these resolutions be spread upon the minutes of the society and a copy furnished the family.

K. S. HOWLETT,  
B. T. NOLEN,  
J. O. WALKER.

### NEWS NOTES AND COMMENTS

Dr. Charles S. Paddock announces the opening of offices in the Medical Arts Building, Suite 701-7, Memphis. Practice limited to Urology and Urologic Surgery.



Dr. Sidney W. Ballard announces the opening of his office, Suite 807-8 Bennie-Dillon Building, Nashville. Practice limited to general surgery.

#### DOCTORS LIST DEADBEATS

St. Louis.—A resolution aimed at "Professional Deadbeats," patients who do not pay their bills, has been indorsed by the St. Louis County Medical Society. The resolution, recently passed by the Lincoln County Medical Society, provides for circulation among physicians of a delinquent list and denial of services to such "deadbeats" until they shall have settled previous medical bills.—*Nashville Banner*.

### MEDICAL SOCIETIES

#### *Chattanooga and Hamilton County:*

Beginning in September regular weekly meetings will be resumed. Every Thursday night at 8 p. m. there will be a program. Programs have been arranged as follows:

Sept. 6: "Direct Fixation in Hip Fractures: Preliminary Report," by Dr. R. C. Robertson.

Sept. 13: "The Anemias," by Dr. J. D. L. McPheeters.

#### *Davidson County:*

A special midsummer meeting of the Nashville Academy of Medicine and Davidson County Medical Society was held at Belle Meade Country Club on Tuesday night, July 31.

The society was especially fortunate in having the following distinguished guest speakers:

Dr. W. C. Alvarez, Mayo Clinic—The Diagnosis and Treatment of Diarrhoea.

Dr. F. A. Willius, Mayo Clinic—Newer Concepts of Coronary Disease.

The meeting was held at 8:00 o'clock and was preceded by a Dutch dinner at 6:30. A large attendance was present.

#### STANDING COMMITTEES

##### COMMITTEE ON SCIENTIFIC WORK

H. H. Shoulders, Chairman, Nashville  
A. F. Cooper, Memphis  
W. J. Sheridan, Chattanooga  
Jesse C. Hill, Knoxville

##### COMMITTEE ON PUBLIC POLICY AND LEGISLATION

L. W. Edwards, Chairman, Nashville  
T. R. Ray, Shelbyville  
Robert Sullivan, Nashville  
Battle Malone, Memphis  
Tom R. Barry, Knoxville  
J. O. Manier, ex officio, Nashville  
H. H. Shoulders, ex officio, Nashville

##### COMMITTEE ON MEDICAL EDUCATION

O. S. Warr, Chairman, Memphis  
W. H. Witt, Nashville  
Franklin Bogart, Chattanooga  
Oliver Hill, Knoxville

##### ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

B. F. Byrd, Chairman, Nashville  
Percy Wood, Memphis  
Eugene Abercrombie, Knoxville

##### LIAISON COMMITTEE

Hiram A. Laws, Chattanooga (five years)  
Tom Mitchell, Memphis (four years)  
J. L. Raulston, Knoxville (three years)  
W. C. Dixon, Chairman, Nashville (two years)  
W. P. Wood, Knoxville (one year)

##### STATE TUBERCULOSIS HOSPITAL COMMISSION

W. S. Rude, Chairman, Ridgely  
O. N. Bryan, Nashville  
H. R. Townsend, Oakville  
James L. Hamilton, Chattanooga

##### HOSPITAL COMMITTEE

Lee Gibson, Chairman, Johnson City  
D. R. Pickens, Nashville  
E. H. Baird, Dyersburg  
E. Dunbar Newell, Chattanooga  
Kyle C. Copenhaver, Knoxville  
W. K. Edwards, Centerville  
J. A. McIntosh, Memphis

##### CANCER COMMITTEE

A. G. Kern, Chairman, Knoxville  
A. M. Patterson, Chattanooga  
J. A. Crisler, Jr., Memphis  
James W. McClaran, Jackson  
Howard King, Nashville  
E. T. West, Johnson City  
J. A. McCulloch, Maryville

## LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. J. O. Manier, Nashville.  
 Vice President for East Tennessee—Dr. W. B. Campbell, Cleveland.  
 Vice President for Middle Tennessee—Dr. J. K. Blackburn, Pulaski.  
 Vice President for West Tennessee—Dr. G. H. Berryhill, Jackson.  
 Secretary—Editor—Dr. H. H. Shoulders.  
 Assistant Secretary—Editor—Dr. W. M. Hardy.

## TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.  
 Dr. Ralph Monger, Medical Arts Building, Knoxville.  
 Dr. W. L. Williamson, 915 Madison Avenue, Memphis.  
 Dr. H. B. Everett, 2541 Broad Street, Memphis.  
 Dr. E. R. Zemp, Walnut Street, Knoxville.

## COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.  
 Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. J. H. Revington, Chattanooga.  
 Fourth District—Dr. J. T. Moore, Algood.  
 Fifth District—Dr. John W. Sutton, Petersburg.  
 Sixth District—Dr. L. W. Edwards, Nashville.  
 Seventh District—Dr. C. D. Walton, Mt. Pleasant.  
 Eighth District—Dr. J. R. Thompson, Jackson.  
 Ninth District—Dr. E. H. Baird, Dyersburg.  
 Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.  
 Dr. H. H. Shoulders, Nashville; Middle Tennessee.  
 Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.  
 Dr. M. M. Cullom, Nashville; Middle Tennessee.  
 Dr. E. C. Ellett, Memphis; West Tennessee.

## OFFICERS OF COUNTY MEDICAL SOCIETIES FOR THE YEAR 1934

County	President	Vice President	Secretary-Treasurer
Anderson	J. M. Cox, Coal Creek	Thomas Jennings, Clinton	J. S. Hall, Clinton
Bedford	S. S. Moody, Shelbyville	W. T. Sharp, Farmington	Alfred Farrar, Shelbyville
Blount	E. W. Griffin, Townsend	C. C. Vinsant, Maryville	H. A. Calloway, Maryville
Bradley	E. R. Ferguson, Cleveland	Vance H. Bell, Cleveland	D. N. Arnold, Cleveland
Campbell	R. J. Buckman, Westbourne	S. S. Brown, Jellico	F. A. McClintock, Newcomb
Carroll	O. W. Fesmire, McKenzie	E. W. Hillsman, Trezevant	J. H. Williams, McKenzie
Carter	C. B. Baughman, Elizabethton		E. T. Pearson, Elizabethton
Coke			J. E. Hampton, Newport
Chester, Henderson, and Decatur			Wm. I. Howell, Lexington
Cumberland	E. W. Mitchell, Crossville		V. L. Lewis, Crossville
Davidson	John M. Lee, Nashville	W. G. Kennon, Nashville	N. S. Shofner, Nashville
Dyer, Lake, and Crockett	W. S. Alexander, Ridgely	B. G. Marr, Dyersburg (Dyer) R. E. Hellen, Ridgely, (Lake)	J. Paul Baird, Dyersburg
Fayette, Hardeman			B. F. McNulty, Bolivar
Fentress	I. R. Storie, Jamestown		J. P. Sloan, Jamestown
Cibson	Featherston Douglas, Dyer	Paul D. Jones	F. L. Roberts, Trenton
Giles	John Morris, Pulaski	Joe B. Wright, Lynnville	T. F. Booth, Pulaski
Greene	C. P. Fox, Greeneville	L. E. Dyer, Greeneville	M. A. Blanton, Mosheim
Grundy	D. H. Bryan, Monteagle	T. F. Taylor, Monteagle	U. B. Bowden, Pelham
Hamblen	D. R. Roach, Morristown		R. A. Purvis, Morristown
Hamilton	Franklin B. Bogart, Chattanooga	James L. Bibb, Chattanooga	Wm. J. Sheridan, Chattanooga
Hardin, Lawrence, Lewis, Perry, and Wayne	J. W. Danley, Lawrenceburg		C. C. Stockard, Lawrenceburg
Haywood	R. T. Keeton, Brownsville	Glenn T. Scott, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Elroy Scruggs, Paris	R. G. Fish, Paris
Hickman	L. F. Pritchard, Only	C. V. Stevenson, Centerville	W. K. Edwards, Centerville
Humphreys			W. W. Slayden, Waverly
Jackson	J. D. Quarles, Whitleyville	R. C. Gaw, Gainesboro	F. B. Clark, Gainesboro
Knox	E. A. Guynes, Knoxville	H. T. McClain, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	J. L. Dunavant, Ripley	T. E. Miller, Ripley	J. R. Lewis, Ripley
Lincoln	J. E. Sloan, Boons Hill		J. M. McWilliams, Fayetteville
Loudon			J. Gilbert Eblen, Lenoir City
Macon	D. D. Howser, Lafayette		J. Y. Freeman, Lafayette
Madison	Kelly Smythe, Bemis	Swann Burrus, Jackson	S. M. Herron, Jackson
Maury	Robert Pillow, Jr., Columbia	C. O. Fowler, Springhill	
McMinn	W. R. Arrants, Athens	Watt Keiser, Columbia	C. D. Walton, Mt. Pleasant
McNairy	John R. Smith, Selmer	D. P. Brendle, Englewood	R. W. Epperson, Athens
Monroe		G. B. Curry, Selmer	H. C. Sanders, Selmer
Montgomery			W. J. Cameron, Sweetwater
Obion	W. B. Harrison, Union City	Har Glover, Union City	Paul E. Wilson, Clarksville
Overton			Frank Kimzey, Union City
Polk	H. P. Hyde, Copperhill	T. J. Hicks, Copperhill	A. B. Qualls, Livingston
Putnam	J. T. Moore, Algood	T. M. Crane, Monterey	F. O. Geisler, Isabella
Roane	John Roberts, Kingston	F. A. Neergaard, Harriman	Thurman Shipley, Cookeville
Robertson	J. R. Connell, Adams		W. W. Hill, Harriman
Rutherford	W. T. Robison, Murfreesboro	J. D. Hall, Readyville	J. S. Hawkins, Springfield
Scott			J. A. Scott, Murfreesboro
Sevier	O. H. Yarberry, Sevierville	R. J. Ingle, Sevierville	D. M. Woodward, Huntsville
Shelby	W. L. Williamson, Memphis, J. B. Stanford, Memphis, President-Elect	W. L. Rucks, Memphis	C. P. Wilson, Sevierville
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Sullivan and Johnson	W. K. Vance, Jr., Bristol	J. V. Hodge, Kingsport (Sullivan) J. C. Hutchinson, Crandall (Johnson)	A. F. Cooper, Memphis, Secretary Thayer S. Wilson, Gordonsville
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Weakley	T. W. Fields, Dresden	T. V. Hannings, Martin	C. H. Long, Johnson City
White	R. E. Lee Smith, Doyle	E. B. Clark, Sparta	E. J. Huey, Martin
Williamson	H. C. Stewart, Franklin	Dan German, Jr., Franklin	A. F. Richards, Sparta
Wilson	S. B. McFarland, Lebanon	R. L. Witherington, Lebanon	K. S. Howlett, Franklin J. R. Bone, Lebanon



*Giles County:*

The Giles County Medical Society met in regular session on Thursday, July 26, 1934.

Dr. J. M. Dorris of Memphis, Tenn., read a very interesting and instructive paper on "Diagnosis and Treatment of Head Injuries."

Most of the physicians of the county are members of the society and our attendance is pretty good.

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*Hardin, Lawrence, Lewis, Perry and Wayne Counties:*

Eighteen doctors were present on July 31 at Savannah to enjoy the following program:

"Acute Abdominal Symptoms Arising from Ovarian Pathology," by Dr. J. H. Tilley, Lawrenceburg. Discussion opened by Dr. G. N. Springer, Hohenwald.

"A Study of the Treatment of Cervical Erosions and Its Relationship to Cancer. Lantern slide illustrations," by Dr. P. C. Schreier, Memphis. Discussion opened by Dr. D. L. Woods, Waynesboro.

"Infant Feeding," by Dr. Walker L. Rucks, Memphis. Discussion opened by Dr. T. J. Stockard, Lawrenceburg.

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*Henry County:*

The Henry County Medical Society met in regular session June 26. Dr. Geo. Boone of Paris, presented a paper, entitled, "Intravenous Glucose." Drs. J. H. and George McSwain had the discussion. A fine attendance was present.

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*Knox County:*

July 10: "Dwarfism and Infantism," by Dr. James E. Cottrell, of Philadelphia. Dr. Cottrell is always a welcome visitor in Knoxville and a good attendance always hears him.

July 17: "X-ray Treatment of Uterine Hemorrhage," by Dr. Eugene Abercrombie. Dr. H. H. Campbell opened the discussion.

July 24: "Endocrinology in Infants and Children," by Dr. W. R. Cross. Dr. Joe Smith opened the discussion.

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*Washington County:*

On Thursday, September 6, this society will hold its next meeting. The program will be as follows:

"Some Phase of Medical History," by Dr. W. J. Matthews. Discussion to be opened by Dr. C. H. Long.

"The Development of a More Perfect Human Race," by Dr. H. D. Miller and Dr. J. G. Moss. Discussion to be opened by Dr. West.

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*Williamson County:*

At the regular meeting of the Williamson County Medical Society on Tuesday, July 17, Dr. J. A. Crabtree of the State Health Department presented a paper on "Milk-Borne Gastrointestinal Toxaemia."

Resolutions upon the death of Dr. Dan German, Jr., and Dr. J. B. Core, both of which had occurred in July, were read and adopted.

Dr. R. H. Hutchison was appointed to read a paper at the August meeting, subject, "The Use of Alum-Precipitated Toxoid in Diphtheria Prevention."

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*Wilson County:*

Dr. L. D. Cotten will be the essayist at the next meeting of the Wilson County Society. "Bronchiectasis" is the subject of the paper. Meeting will be held September 6th.

<b>OTHER MEDICAL SOCIETIES</b>
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At a joint meeting of the Montgomery, Robertson, Cheatham, Stewart and Houston County Medical Societies held at Dunbar Cave, on Tuesday, July 17th, a group society was formed which will be known as the Black Patch Medical Society. This

name was selected because this group of counties is in the heart of the black patch tobacco district.

Thirty-five doctors from the five named counties were present as well as a number of visiting doctors from Nashville, Tenn., and Hopkinsville, Ky.

Officers elected for one year were as follows: President, Dr. M. L. Hughes of Clarksville; Vice President, Dr. W. F. Fyke of Springfield; Secretaries, Dr. W. S. Rude, Ridgetop, and Dr. Paul Wilson of Clarksville.

Dr. W. H. Witt of Nashville talked on the importance of small county societies uniting to form zone societies in order that better attendance would be stimulated and a more thorough course in postgraduate instruction be given members.

Dr. John M. Lee of Nashville talked on the "Immunization of Children Against Disease."

Dr. O. H. Wilson of Nashville discussed the "Dietetic Management of Summer Diarrhoea of Children."

Dr. J. C. Overall of Nashville talked on "Acute Respiratory Diseases of Children."

The next regular meeting will be held in Clarksville in September.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Bad Anesthetic Risks—Their Management. John Miller Wilson, M.D. California and Western Medicine. July, 1934.

Management of bad anesthetic risks depends on the selection of the proper anesthetic agent and choice of different methods of administration as well as on preliminary and postoperative treatment. Cardiac cases may or may not be bad risks. A simple heart murmur without symptoms of decompensation should give no trouble. Hypertension without symptoms should be disregarded.

But when there is present substernal pain, etc., a guarded prognosis should be given. Prolonged stage of excitement avoided. Coronary cases are bad risks—myocardial cases demand rest and digitalis, and supporting treatment given.

In respiratory risks as thorocoplasties demand complete cardiac examination due to the myocardial damage from prolonged infection. A proper position should be maintained and a high percentage of oxygen administered.

Renal risks do well under gas anesthesia. The same holds true to all operations on the genitourinary system. Thyroid cases respond well to local or gas anesthesia but should receive preliminary treatment with sedatives, iodine, digitalis and rest. Gastrointestinal cases generally require some ether in the gas mixture. And obstruction cases should undergo gastric lavage before anesthesia. Head injuries require little anesthesia but shock must be combated. Anemic patients require high percentage of oxygen and diabetics should never have ether but gas can be used with safety.

### DERMATOLOGY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

An Aid in the Management of Occupational Contact Dermatitis (Dermatitis Venenata). P. R. James, M. D., Toledo, Ohio. Archives of Dermatology and Syphilology. July, 1934.

About a year ago the author began experiments with the use of a protective compound in the prevention of occupational dermatitis. This compound consisted of ivory soap flakes, glycerine, sodium silicate, tragacanth, oil of lemons and water. An application of this produced an invisible covering that was non-irritating to the normal skin and was soluble only in water.

From the repair department of a glass factory he selected six men who were complaining of a dermatitis of the hands, forearms and face. All of these men showed a positive reaction to patch tests made from a greasy deposit from one of the machines. Other patch tests were negative. Of these six cases all were either cured or kept under control. No other medicine was used except calamine lotion while they were off duty.

Two men were selected from a paint and varnish factory. The results obtained was the same as that of the previous six cases. It was thus demonstrated that the regular use of a protective film makes it possible for many persons with dermatitis venenata to continue their occupation without harmful results.

The writer further states that since writing this



article he has observed that perspiration during very hot weather makes it difficult to keep the perspiration on the skin due to the fact that it is water soluble.

### OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

The Operative Treatment of Cataract. R. E. Wright.  
*American Journal of Ophthalmology.* July, 1934.

A discussion of the procedures adopted as the result of experience with 20,000 cataract extractions at the Government Ophthalmic Hospital at Madras is given. In selecting cases for operation, the trial bandage without culture is used. Having passed a trial bandage test, the conjunctival sac is cleansed with Herbert's perchloride irrigation. O'Brien's akinesia is used routinely, and retrobulbar injection is used in all difficult extractions and in many straightforward cases. Sedatives are used freely, 2 drams of triple bromide, 1-200 hyoscin,  $\frac{1}{4}$  gr. morphia, 4 tablets of allonal and 2 tablets of medinal being given inside of forty-eight hours if necessary to insure restfulness. The old-fashioned notion that the patient must be kept lying flat and still for days is rejected. Smooth, gentle movement with early sitting up and walking are allowed. The unoperated eye is uncovered within twenty-four hours. In suitable cases the most favored method of dealing with the anterior capsule has been with a needle immediately before the corneal section. Intracapsular extraction is practiced either by the Barraquer technic or with forceps. "The most disappointing thing about intracapsular extraction is the relative infrequency with which immature cataract can be removed without unjustifiable trauma."

Irrigation of the anterior chamber is considered an important part of the operation of extracapsular extraction. It is carried out rather vigorously until it is considered that no further cortical remnants or capsular tags will come away. A moderately large conjunctival flap without suture, or a bridge flap, is used in most cases. The author recommends completing the section in the limbus or clear cornea. Where sutures are employed, corneoscleral sutures, which effect true surgical closure of the deep wound, are used. No corneal sutures have been found entirely satisfactory. In after cataract, discission with a single Bowman's needle passed through the cornea is practiced. For an emergency of escaping vitreous, a sliding conjunctival flap has been used. Reference is made to the fact that in Madras, where there is a very high percentage of cataract, seventy per cent of the population have hookworm. The author believes that senility in itself is not productive of the opaque condition of the lens which we refer to as senile cataract.

### PEDIATRICS

By JOHN M. LEE, M.D.  
Doctors Building, Nashville

Paracentesis of the Pericardium as a Therapeutic Measure. Lucy Porter Sutton, M.D., New York.  
*Amer. Jour. Diseases of Children.* July, 1934.

Pericardial effusion may be so great as to cause symptoms and great discomfort and may endanger the life of a child already very ill from a rheumatic carditis. Curschman and Conner decided that the posterior site is the most suitable for tapping the pericardium. They reasoned that the inflamed pericardium becomes greatly distensible, the left pouch fills, extends posteriorly, pushes the lung aside, and may contact the posterior wall of the chest. The heart fixed by the aorta and the superior and inferior vena cavae cannot sink down and back, but remains close to the anterior chest wall. For this reason a pericardial friction rub may be heard even in the presence of a large effusion.

The following signs develop posteriorly with much pericardial fluid: (1) an area of flatness below the angle of the left scapula, (2) bronchial breathing in this area, (3) bronchophony or egophony.

The actual technic of this procedure is that of a pleural tap, the needle being inserted usually at a point near the center of the area bronchial breathing. A needle of large bore about 10 cm. in length is used. Sometimes the needle must be inserted for some distance before entering the sac. The sensation of the needle piercing the thickened pericardium is distinctive. In a properly inserted needle the fluid in the syringe moves synchronously with the heartbeat.

As soon as a friction rub is discovered a roentgenogram should be made and repeated every two or three days to determine increase of fluid. The fluoroscope should be employed frequently to note the progress of the condition. In lateral views the diminution and final disappearance of the clear space between the posterior outline of the heart shadow and the posterior chest wall may be noted. Sudden drop of blood pressure in the presence of a known pericardial effusion is an indication for therapeutic tap. It is also indicated if the child becomes increasingly uncomfortable, with marked dyspnea, orthopnea, cyanosis and cough.

From the results observed, patients can be made much more comfortable by this procedure, but since effusion develops in patients who have a severe infection with advanced heart disease, the prognosis for length of life is poor.

Case histories of eleven children having pericardial effusion treated by paracentesis are given. Two of these cases came to autopsy and it was demonstrated in these two cases that the needles inserted posteriorly actually entered the pericardium without penetrating the lungs.

## SURGERY—GENERAL AND ABDOMINAL

By ROBIN F. MASON, M.D., F.A.C.S.  
735 Medical Arts Building, Memphis

Electrosurgical Obliteration of the Gall Bladder. Max Thorek, M. D., Chicago. *The Journal of the American Medical Assn.* July 21, 1934. Page 169.

The author states that, while in the hands of experts, dealing with patients around forty years of age, cholecystectomy with the knife may yield the low mortality rate of from 1 to 2 per cent, the general mortality is too high.

He quotes statistics by Enderlen, Hotz, Lyons and others, giving mortality rates ranging from 10 per cent to as high as 20 or even 30 per cent in complicated cases operated by the average surgeon. He is also struck with the higher mortality rate in males as compared with females.

He gives the cause of death and complications in scalpel cholecystectomy as: peritonitis, shock, hemorrhage, pulmonary embolus, pneumonia and cholemia. The first four he regards as most common and apparently inseparable from scalpel surgery.

He states that in most cases death and complications are traceable to biliary seepage from the gall-bladder bed, which contains capillaries and oftentimes ducts as well.

The danger of drainage is then dwelt upon with its train of bile, peritonitis, hemorrhage from erosion of vessels, fistulas, adhesions, etc.

On the other hand drainage seems almost imperative in scalpel cholecystectomy.

How to escape the twin dangers, drainage and non-drainage, seems to the author, the chief problem.

Pribram and others have spoken of cauterizing the mucosa of the gall bladder to avoid fistula.

The author himself has shown that "such cauterizing is insufficient to eliminate the gall bladder and eradicate the disease."

His studies along this line have caused the author to develop a technic, elsewhere fully described, of electrosurgical obliteration of the gall bladder (*Ill. M. J.*, 64: 425, Nov., 1933), whereby the portion of the gall bladder adhering to the fossa is left as a dry eschar, sterile and non-seeping, while the remainder of the gall bladder is removed in the usual way.

The eschar in the fossa is covered over with the falciform ligament and the abdomen is then closed without drainage.

He has done 75 consecutive cholecystectomies by this method to date without a death.

## UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
Medical Building, Knoxville

Syphilitic Fibrosis and the Status of the Iodides in the Present-Day Treatment of Syphilis. Sigmund S. Greenbaum, M.D., and John Cobane, M.D. *American Journal of Syphilis and Neurology.* Vol. 18, No. 3.

The fact that syphilis may be the etiologic factor in the production of hard, symmetrical intra and subcutaneous fibrotic nodules is not generally recognized, although they are almost pathognomonic of the disease. Fibroid gummas or juxta-articular nodules are indolent lesions which tend to develop around joints, and are usually symmetrical. They are at first cutaneous and movable but later become fixed to underlying tissue. They rarely break down. The above lesions are rare in the United States, but common in the eastern countries. They are really an illustration of the effect of trauma on the development of syphilitic lesions plus the fibrotic tendency of the individual.

The complement fixation is positive in almost 100 per cent of these cases. Treatment in the early stages will cause these nodules to disappear. These lesions show partly and completely formed new connective tissue. Treatment by organic arsenicals and bismuth cause complete disappearance. Two marked cases of multiple fibrotic gummas are given in detail with prompt cure.

It is a well known fact that iodine and its salts have no effect either upon the spirochaete or Wassermann. It is generally agreed that the iodides have no place in the treatment of early syphilis. The only exception being where the newer drugs are not well born. When a tertiary cutaneous lesion heals there remains a scar that cannot be made to disappear by the use of any drug. The scotoma following interstitial keratitis is a good example.

The authors believe that the therapist can obtain not only as much but definitely more with the organic arsenicals or with bismuth than can be done with iodides. They state that an intramuscular injection twice a week with 50 mg. of a 60 to 70 per cent bismuth compound is equal to about 10 gr. of iodide T. I. D. for one week. Arsenicals and bismuth compound not only have fibrolytic properties but are also spirocheticidal.



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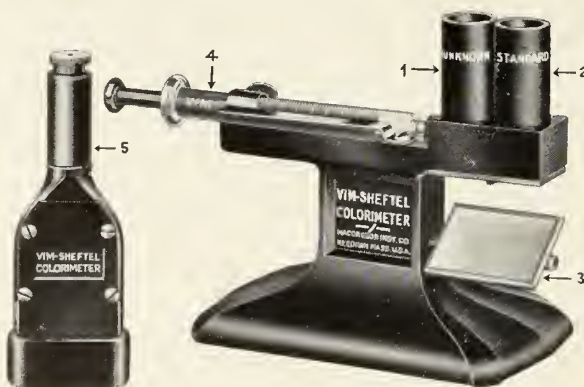
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# THE JOURNAL

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### SYMPOSIUM ON THE MANAGEMENT OF COMMON TRAUMATIC CASES

At the last meeting of the State Society a symposium on the "Management of Traumatic Wounds" was given. We are attempting to give these papers in one issue of THE JOURNAL and thereby probably enhance their value to the membership.

It will be noted that the presentation made by Dr. Battle Malone does not appear. The reason is that Dr. Malone has not prepared a text to be printed. His presentation consisted largely of a demonstration of the uses of various splints and appliances and it is hardly practical for Dr. Malone to prepare a text. We regret the circumstance.—*Editor*.

#### THE MANAGEMENT OF TRAUMATIC WOUNDS OF SOFT PARTS\*

EDWARD T. NEWELL, B.S., M.D., F.A.C.S.,  
Chattanooga

This is an exceedingly large subject and only the salient points of the accepted methods of management of traumatic wounds will be referred to in this brief discussion of the subject.

By reason of the "Machine Age" in which we are living today, fractures have increased more than 100 per cent—in the past fifteen years (1,000,000 per year in the United States), while trauma of the superficial and deeper structures evidences an even more formidable increase.

As a consequence of the increase in trauma, there has been developed the Traumatic Surgeon—a rather ill-defined specialty, yet as the nomenclature would indicate, one who treats the injuries of the body. Motorization of transportation and the installation of industries in small centers make it incumbent upon all physicians

to be prepared to properly treat emergencies.

The traumatic surgeon has a wide and useful field and while one may consider his work confined to "urgent surgery," such is not necessarily the case. It is true, a large part of the traumatic surgeon's work is urgent, requiring prompt service, yet equally as large a percentage should be undertaken advisedly, at the appropriate time, and under proper conditions.

To illustrate—a patient comes to or is brought to the surgeon following a railway accident, with a laceration in the scalp, with brush burns on face and extremities, in shock, and suffering great pain in the region of the pelvis.

The traumatic or railway surgeon attending the case knows full well that "multiple and serious injuries" are of such frequent occurrence that he should look beyond the glaring trauma and hemorrhage of the soft parts for the more subtle and obscure injuries to the bony framework and probably to the vital organs and viscera. Especially does he ascertain whether the continuity of the larger blood vessels and nerves have been interfered with.

In the case recounted above, one would suspect injury to the brain and also to the

\*This includes open and contused wounds, blood vessel injuries, nerve injuries; the use of antiseptics and their selection; the suture and drainage of such wounds.



pelvic ring. Under such conditions, it would be improper to suture the scalp, clean up and dress the brush wounds, until the patient had recovered from the shock, and investigation (X-rays, close observation, etc.) had revealed the true condition of the brain, bones and viscera.

A hypodermic of morphine is indicated in most cases of severe trauma—(paregoric or codeine in children). The most gentle handling of the patient and traumatised structures is of paramount importance.

In admitting an emergency there is no greater duty to be performed by the railway surgeon or doctor than is the proper handling of the patient, relatives, friends, police, reporters, ambulance chasers, etc. The doctor should be definitely in charge, as soon as the case arrives. Absolute order and quiet; the proper psychology (the art of medicine) should be maintained, while the doctor and his assistants set about doing what should be done—promptly and efficiently.

Grossly depicting trauma of the soft parts, there are two grand divisions—open and closed trauma—subdivided as follows: four grades:

1. Cutaneous trauma.

- (a) Abrasions.
- (b) Brush burns.
- (c) Contusions, superficial and deep.
- (d) Ablation of skin—minor and major. Avulsion scalp and scrotum.

2. Injuries involving skin with deeper structures, fat, fascia, muscles, tendons, joint surfaces, small vessels and nerves. Subcutaneous hemorrhages, hematoma, par-esthesia.

3. Severance of skin muscles, tendons, nerve trunks and large blood vessels; lacerated and penetrating wounds, stab wounds, gunshot wounds, etc.

4. Massive trauma to all soft parts, where skin, muscles, fascia, tendons and nerves are not only traumatised, but where areas of the skin have been destroyed and muscles severed or destroyed; large vessels severed or destroyed; and with severance or destruction of nerve trunks. Accompanying

such injuries one usually would find bone trauma, and if the injury involved the trunk, severe visceral injuries as well.

Treatment: Cutaneous trauma — abrasions, brush burns, contusions, lacerated penetrating wounds and massive trauma, all demand the most meticulous mechanical cleansing followed by as perfect chemical sterilization as can be accomplished. The size, character of the wound and manner of production are not positive criteria as to whether infection has or will develop, or of the offending organism. Ofttimes the simplest of wounds may produce the greatest sequela and vice versa.

Many and varied are the methods for mechanical cleansing of wounds. First, one should remove grossly all macroscopic detritus—gravel, cinders, dirt, etc. Then with sterile cotton balls, saturated with boric solution, wash the surrounding parts freely—away from the wound—never, under any circumstances, wash the surrounding filth into the receptive wound area. By this procedure you will probably have eradicated more than 50 per cent of the dirt and pathogenic bacteria. Next, I would advise cleansing around the wound with benzine or better commercial ether. A thorough scrubbing with either will remove most of the remaining infective material. Dry thoroughly, if using benzine, and follow with a 70 per cent alcohol wash. This may or may not be necessary, but if the wound is very dirty and extensive, this additional procedure will reduce the likelihood of infection. Assuring that the wound has been cleansed thoroughly close to the edges, one should now apply 5 per cent tincture of iodine to the circumference, and then down into the depths of the wound. The traumatised area should be flushed with alcohol, and if necessary the excess tincture of iodine on the skin may be removed with alcohol after one or two minutes' application. The injudicious use of tincture of iodine is a menace to good surgery. You have all seen its ravages.

If the trauma is large or the patient unusually sensitive, or a child, it will be necessary to use local anesthesia in the wound

before applying tincture of iodine or alcohol. If you are dealing with a very extensive wound, where grit has been ground into the skin and tissues, general anesthesia is preferable, especially as rough scrubbing with a stiff brush will be necessary, as well as debridement. Local anesthesia using a small hypodermic needle and 1 per cent novocaine in these cases is of dual importance for more thorough sterilization of the wound and for better (painless) surgery, debridement, ligation of blood vessels, application of sutures, etc.

Many surgeons and authorities recommend cleansing the skin and abraded surfaces with soap and water preliminary to chemical sterilization. I see no objection to this method, especially if the area involved is very extensive, dirty or greasy, but as a routine procedure I do not believe it necessary or as satisfactory as the method suggested in the previous paragraph. Thorough shaving of all hair from the traumatised area preliminary to mechanical cleansing is a most important adjunct.

Second only to tincture of iodine as an antiseptic in the treatment of trauma I prefer tincture of metaphen. It causes less pain, when applied to a raw surface, than does tincture of iodine, and, in superficial wounds, is probably equally as efficacious. Two to four per cent mercurochrome for simple trauma is extensively used by many railway and traumatic surgeons, but I do not believe it produces as high a degree of wound sterilization as does tincture of iodine or metaphen.

S. T., 37, 3 per cent aqueous solution of carbolic acid, 1-2,000 bichloride of mercury and other solutions are used by many good surgeons where infection has developed or may develop, and where there is a probability of development swabbing out the wound with pure phenol, followed by alcohol flush, is a rational procedure. In all skin lesions and deeper traumas, where there is a reasonable possibility of tetanus developing (from manner of production), an immunizing dose of tetanus serum should be administered. In massive trauma, the combina-

tion of tetanus and perfringens is recommended.

When in doubt give the serum. One should always inquire about previous serum injections before giving tetanus serum, and if same has been given, desensitize the patient before giving the prophylactic injection. In gunshot wounds, the giving of tetanus serum is not sufficient to establish immunity, thorough debridement should be done, all gun wadding and clothing removed from the wound, else the patient will develop tetanus later, when the immunity from the serum ceases to act.

Ordinarily, by reason of the rich anastomoses of arteries and veins throughout the body, a severed vessel can be ligated without any serious disturbance to the circulation. In certain regions, however, when an artery is severed, it may be necessary to do an end-to-end anastomoses of the main vessel, to prevent gangrene and loss of the limb. In the case of a gunshot or penetrating wound, where the hemorrhage has ceased, by waiting a few days, until the collaterals have developed, ligation may be safely and satisfactorily accomplished.

## CASE REPORTS

### *Arteriorrhaphy*

J. M. S. Nerve injuries. Complete severance in open wounds should be sutured as soon as it is expedient to operate. Simple suture of the sheath with fine silk on very small round needles without rotation of nerve trunks — perfect approximation of nerve bundles gives a high percentage of restoration of nerve function. In closed trauma with loss of nerve function, it is well to wait six to eight months for possible return of function, some authorities to the contrary.

H. B. S. Fracture humerus—musculo-spiral paralysis. Return eight months later without operation.

Muscle suture is a simple procedure. Interrupted suture of plain or chromic catgut usually suffices. Healing is prompt and function good. Tendon suture is a very much more difficult procedure and if occurring at the wrist (anterior or posterior—com-



plete severance) operation should be performed preferably, under local anesthesia (assistance of patient), using fine silk or linen, doing the classical running continuous tendon suture. This suture is usually supplemented by a few interrupted stitches where necessary.

Where infection in a small superficial trauma has produced lymphangitis—streptococcic (typical red streaks running up the extremities)—I know of no more striking conquest in recent surgical procedures than the proper application of the hot boric pack for 24 to 48 hours. The pack should be removed every 24 hours and sterile dressings applied to the involved area for 3 to 4 hours, otherwise you may have unpleasant complications develop—necrotic areas, etc.

For deep infections, free incisions, preferably under gas or a nerve block with dakini-zation every two hours, should be the method of election. The Dakins should be accurately made and properly applied.

All traumatic wounds requiring sutures are best closed with interrupted sutures, nonabsorbable for skin and fascia, loosely applied, and not too close together. Deep sutures, to prevent dead spaces, are best taken with plain or chromic catgut—interrupted. Soft rubber tubing is a satisfactory drainage material, and should be used when infection is present or thought likely to occur. Metal clips and adhesive plaster have a restricted field of usefulness.

All extensively traumatised areas should be splinted for immobilization. In general plain sterile dressings are preferable to wet dressings or the use of ointments, powders, etc. Iodoform gauze in badly infected cases, vaseline gauze, calamine liniment or ammoniated mercury ointment are useful in brush, chemical heat or electric burns. Adhesive plaster strips, sterilized in a flame, will materially reduce the necessity for skin grafting.

Hematoma, bursal and joint effusion may require aspiration or incision and drainage, dressed with pressure. Subcutaneous rupture or laceration of muscle may or may not necessitate open operation and suture of the muscle.

Old chronic leg ulcers superimposed upon leg varicosities by recent trauma respond in nearly 100 per cent of cases to sclerosing solution, followed by the application of Unna's boot.

Myosites ossifycans and misplaced semi-lunar cartilages require special surgical procedures for restoration of function.

F. C. Patient had his foot caught between the elevator and floor, crushing it, on October 19, 1927.

When he came in he was in great shock. His right leg presented a deep cut to the bone, halfway to the knee on the anterior surface of the leg. Tendons severed. Tarsal bones crushed and all tarsal bones of the foot dislocated. The skin and periosteum of the anterior surface of the leg was torn loose. All muscles and fascia from the upper third down to the ankle along the anterior side of the leg completely denuded. Patient was advised to have leg amputated but he and his employers begged for an attempt to save it, and same was granted.

Under ether anesthesia a debridement was done. Dislocation reduced, placed in Cabot splint and seven Dakin tubes inserted. Patient was in hospital from October 19 to January 22, and now has a fairly useful leg. Skin was made to heal by adhesive plaster strapping.

R. V. S., injured July 21, 1933, stayed in the hospital from July 21, 1933, to August 4, 1933. Diagnosis: comminuted oblique fracture right humerus with radial nerve injury.

F. L., injured September 22, 1933, stayed in the hospital from September 22 to October 14, 1933. Diagnosis: extensive laceration of right arm with destruction of the entire culeital space.

#### CONCLUSION

All trauma, regardless of how apparently simple it may appear, should receive thoughtful consideration and careful attention.

In the prevention of infection in an incised lacerated wound, thorough systematic macroscopic cleansing is more important than chemical sterilization.

Of chemical antiseptics, 5 per cent tincture of iodine for general practical purposes gives the greatest number of clean wounds.

The free use of tetanus and perfringens is advised in traumatic surgery.

The traumatic surgeon should be a master in the art of medicine, as well as in the science of surgery. His diagnostic ability, his judgment and his technic should be of the highest order, while his armamentarium and surgical acumen should be sufficient to treat the traumas of any and all parts of the body.

## THE MANAGEMENT OF BRAIN INJURIES

EDGAR F. FINCHER, JR., M.D., Atlanta, Ga.

The increasing number of head injuries demands that every physician have a practical knowledge of these cases and that the greater number of the medical profession be prepared to intelligently care for these patients. The transportation of these cases to medical centers or larger hospitals is in most instances out of the question and the management falls upon the shoulders of the nearest physician. The review of a large series of head injuries brings one to an analysis of symptoms, progress of patients, and the outcome, as based on the method of treatment instigated in each case. One finds with such a review of cases a similarity of cases as presenting similar clinical pictures and in time there evolves a classification into groups of patients presenting symptoms of brain trauma. Such a classification is not only desirable for didactic reasons but has its application in outlining the treatment and prognosis of individual cases. The classification as outlined by Dowman has proven its practical worth and with minor deviations will be followed in this communication.

Evaluating generalization, astounding figures, and "textbook pictures," an attempt to cover the entire group with illustrative case reports will be made. The pathological changes encountered in each group will not be discussed in detail any more than the

physiological or experimental contributions which have prompted certain therapeutic efforts. It is sufficient to state that every patient who suffers a brain injury is a real or potential neurological problem. The value of radiograms of the skull as well as the much debated question of lumbar puncture will be omitted under the various illustrated cases and both will be discussed without individualizing.

### GROUP I—MASSIVE HEAD INJURIES

Case I. 85406. A white male, 26 years of age, was brought into the Grady Hospital on September 4, 1933, the victim of an automobile accident.

**Examination:** Complete unconsciousness, extensive hemorrhaging compound fracture of the forehead, inactive, widely dilated pupils, flaccid inactive extremities, and absent superficial reflexes. His hospital course is illustrated in Fig. 1.

Treatment: External heat, stimulants, intravenous hypertonic glucose and subcutaneous fluids. Sterile pack and pressure

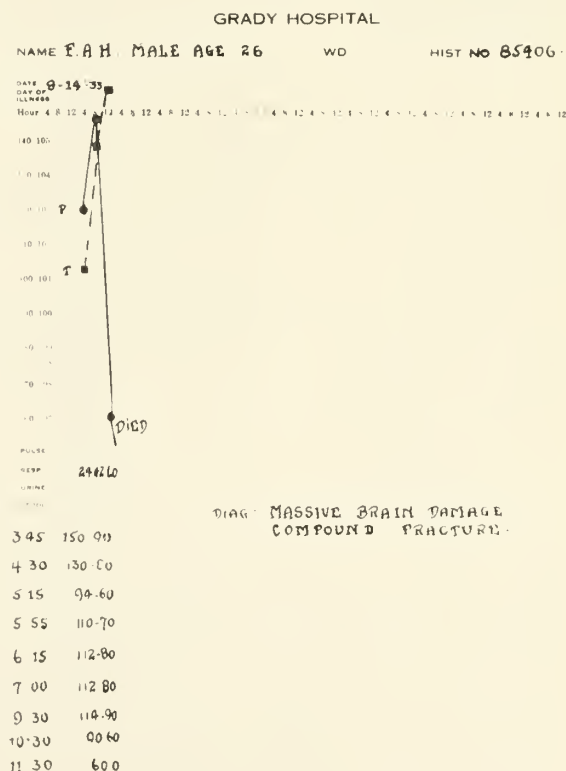


Fig. 1. Death in this group of head injuries is within one to several hours after injury.



bandage for his compound wound. Hydrotherapy for temperature changes.

This case illustrates one of the largest groups of head injuries and in proportion to this number will be the mortality rate in a large series of brain injuries. At no time was this patient's condition such that an attempt to repair his brain damage surgically possible and such is the usual in this group, although the clinical picture may alter a bit. Strictly speaking this group of patients show a rising blood pressure with a corresponding bradycardia and slowing respiration. Their blood pressure rises in proportion to their increasing intracranial pressure up to certain physiological limits after which medullary compensation fails either temporarily or forever. Desperate efforts are sometimes undertaken in these cases with no gratifying results and we have come to treat such cases symptomatically, hoping that they have been classified incorrectly. If they remain within the limits of medullary compensation a decompression should be done, or if present, a repair of their compounded wound is carried out.

#### GROUP II—LINEAR FRACTURES, SIMPLE AND COMPOUND

Case II. 349. A white female, 56 years of age, was brought into the Grady Hospital on January 13, 1934, the victim of an automobile accident.

Examination: Semiconsciousness, disoriented, mentally confused and unable to detail the accident. Cooperation was fair and except for a right Babinski reflex and sluggish abdominal reflexes there were no other neurological findings. Her systolic blood pressure was 165 mm. of mercury. Lumbar puncture revealed bloody spinal fluid under 170 mm. water pressure. Within six hours her blood pressure had dropped to normal and her pulse and respiration had remained within normal limits, so she was transferred to a private hospital. Stereoscopic skull plates showed a linear fracture in the left temporal region.

Treatment and progress: Patient was put on a fluid limitation of 1,200 cc. of hyper-

tonic fluids per 24 hours, saturated magnesium sulphate in 15 cc. doses was given 4 times a day, sedatives for restlessness and codeine sulphate (grs. ss.) for pain. After one week the hypertonic regime was diminished. At no time was there any frank change in patient's blood pressure, pulse or temperature, and on repeated neurological examinations she did not show any positive findings. After two weeks hospitalization she was transferred for a two weeks' rest in bed. After this she was permitted to return home, having no complaints or positive findings on neurological examination.

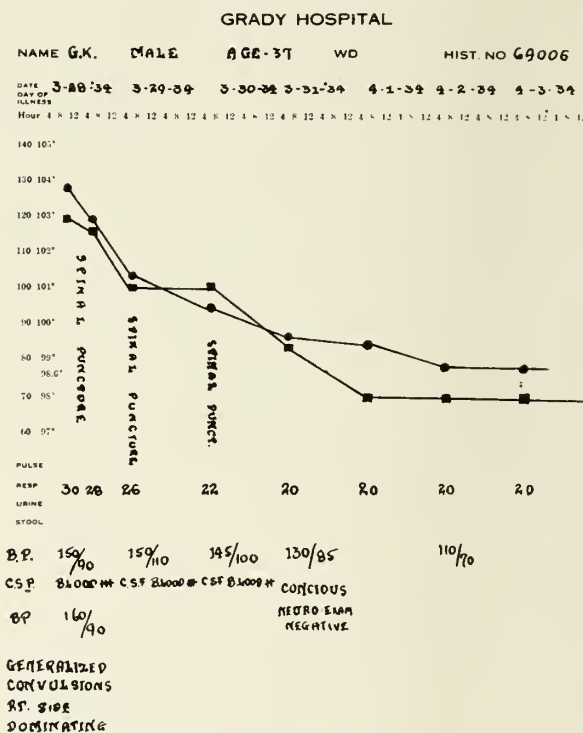


Fig. 2. Had this patient's progress not been one of rapid recovery a left subtemporal decompression would have been indicated.

This case presents a type of injury that suffers a mild amount of actual brain damage and if left alone or refuses treatment may result in the case illustrated in Fig. 2. This man's clinical course as illustrated presented himself in the emergency clinic two days before admission to the hospital and on the day of his accident refused to go into the hospital. Clinically he suffered a more severe amount of brain damage than did Case II, but had the proper treatment

offered him been instigated he would have escaped a disturbing convalescence.

The compound linear fractures are all surgical problems. When first seen the scalp should be widely shaved about the wound, the "scalp" hemorrhage controlled, and it is perhaps wise not to be too hasty in suturing the scalp lacerations. The wound should be sterilized as thoroughly as possible and only after being certain that there is no underlying brain or meningeal damage should the lacerated scalp edges be freshened and closed with two layers of interrupted black silk sutures. If there be any skepticism concerning any damage beneath the bone a trephine opening and as much exposure as to dispel all skepticism can be safely done if carried out with the greatest of aseptic precautions. The development of symptoms indicative of localized brain damage must be kept in mind in these cases, and is illustrated in the following case:

Case III. 31267. An adult white male was brought into the Georgia Baptist Hospital immediately following an automobile accident.

Examination: Semiconsciousness, cooperation fair, sluggish superficial reflexes, a bilateral unsustained ankle clonus. Blood pressure, pulse and respiration normal. Spinal fluid blood tinged and under 220 mm. water pressure. X-ray examination of the skull demonstrated a linear fracture.

Course: The blood pressure rose some 25 points during the night but no one was alarmed over his increasing stupor nor the fact that he did not talk or that he used his left extremities more than he did the right ones. There had developed a spasticity of the right arm and leg, a right Babinski reflex, and ophthalmoscopic examination revealed a frank engorgement of the retinal veins.

Treatment and progress: A left subtemporal decompression was done, and a tear in the cortex of the anterior tip of the temporal convolution and the adjacent portion of the posterior part of the left frontal lobe, was found, filled with blood clots. The clots and contused macerated brain tissue were removed by suction, and all bleeding

vessels were clipped. The dura was not closed. Ten days later the patient was out of bed, walking and using his right arm without any residual spasticity. There was a complete aphasia at first and there still persisted after two and one-half years evidence of trauma to the speech centers.

This case is a story unto itself as to the possibilities in a simple compound fracture and though a patient may be in excellent condition presenting no localizing neurological findings one should not slacken one's vigilance until improvement is an established clinical fact.

#### GROUP III—DEPRESSED FRACTURES, SIMPLE AND COMPOUND

Case IV. Simple depressed fractures, left temporoparietal. J. B. 33157. Referred by Dr. Homer Allen of Decatur, Ga., bicycle accident, and admitted to Henrietta Eggleston Hospital.

Examination: Stuporous, but when aroused cooperated nicely, cerebation and orientation diminished, no neurological findings other than a palpable skull depression and some bleeding from the left ear. X-ray examination showed a depressed fracture in the left temporal region about 3 inches square.

Course: Patient was observed at hourly intervals over an eight-hour period, during which time no neurological symptoms developed.

Treatment and progress: Under general anesthesia a scalp flap was turned down, exposing the entire depressed area. A trephine opening was made after the temporal muscle had been subperiosteally dissected. Through the trephine opening a periosteal elevator was inserted and the major portion of the depressed bone was elevated. A few indriven fragments had to be rongeured away. There was a slight amount of epidural hemorrhage but the indriven fragments had controlled any active middle meningeal bleeding by direct pressure upon the main artery. The dura was then opened widely, disclosing no gross brain damage. The dura was closed tightly, the bone fragments replaced, and the wound closed in



layers. Patient was transferred home one week after operation.

In this case the patient showed considerable shock immediately after his accident. No head injury is such an emergency that surgical interference should be undertaken until a recovery from the shock has taken place. In rare instances where the shock is the result of a loss of blood, transfusion and control of the hemorrhage demand immediate action. During the period of observation in these simple depressed fractures the manifestations of localized brain damage or increasing intracranial pressure should prompt immediate exploration. In all cases where there are no dural tears the dura should be opened and an evaluation of the underlying brain damage should be made. In Case IV a lapse of some fourteen hours' time had taken place before operation and had there been any evidence of cerebral edema, contused tissues or broadened convolutions, a suture of the dura would not have been done, for only by leaving the dura open is a decompression accomplished.

Case V. Compound depressed fracture, right parietooccipital, cerebrospinal otorrhea. M.A.E. 32170. Referred by Dr. H. C. Crawford of Atlanta, Ga., patient thrown from a horse, admitted to Piedmont Hospital.

Examination: Drowsiness and when aroused very obstreperous, absent abdominal reflexes, left Babinski reflexes, subparietal scalp laceration through which a depressed fracture was palpable. Radiograms showed a depressed area 5 by 3 cm. with a linear extension of the fracture into the right mastoid (Fig. 3). Bleeding from the right ear.

Treatment and progress: There being no evidence of shock, patient was carried immediately to the operating room. After the depressed bone fragments had been removed approximately an ounce of macerated brain tissue was irrigated away and all contused tissues were removed by suction. After all bleeding vessels had been controlled it was found that the dura was so macerated that a closure was impossible. The bone frag-



Fig. 3. The scalp laceration was just about the right ear and about one inch long.

ments were sacrificed and the scalp closed in layers. There were no apparent upsets from the operation. For three days there was a continuous spinal fluid drainage from the right ear. This drainage lessened from day to day, which clinical fact prompted conservative observation. Patient discharged from the hospital twelve days after operation and had never on repeated neurological examination shown any positive findings.

This case illustrates a most satisfactory group in treating brain injuries, namely, a thorough debridement, complete hemostasis and closure without drainage. The spinal fluid leakage presents another problem, for if allowed to continue indefinitely a meningitis will develop. Had this spinal drainage continued a craniotomy would have been indicated and a repair of the meningeal tear carried out.

#### GROUP IV—POTENTIAL BRAIN DAMAGE (Fig. 4)

Case VI. 31151. E. F., age 26 years, referred by Dr. Olin Cofer of Atlanta, Ga., momentary unconsciousness, no neurological symptoms, admitted to Piedmont Hospital.

History and examination: Patient was thrown from an automobile, was rendered unconscious for a moment, and was brought

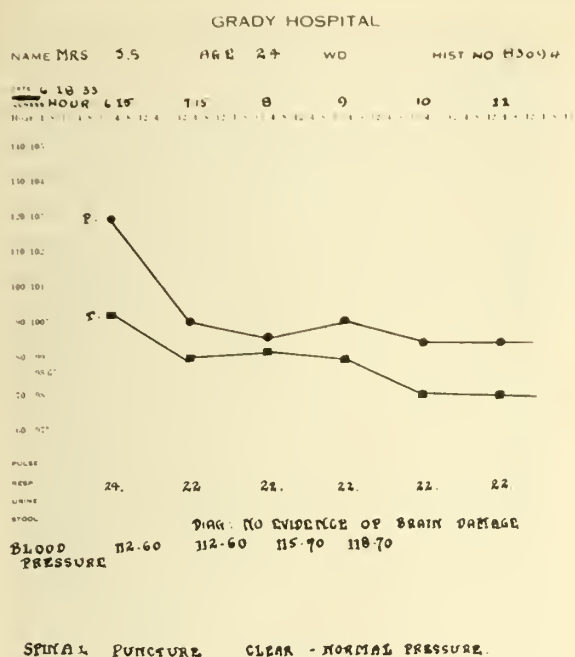


Fig. 4. After a twenty-four hour observation this group of cases are dismissed from the hospital.

immediately into the hospital. Aside from a certain amount of fear patient exhibited no positive manifestations of any brain damage. X-ray examination of the skull gave negative findings.

Treatment and course: An hourly recording check of his blood pressure, pulse and temperature showed no change. Twelve hours after admission a spinal puncture was done. The fluid was clear, under 140 mm. water pressure. After twenty-four hours patient was discharged from the hospital, and when seen three months later had had no subjective symptoms and presented no ill effects from his accident.

Case VII. G. H., aged 9 years. Unconsciousness and vomiting. Referred by Dr. S. C. Davis, of Atlanta, Ga., and admitted to Crawford W. Long Hospital.

History and examination: Patient was knocked down by an automobile, immediately unconscious and remained so for about one and one-half hours. He was in shock for about thirty minutes after hospitalization. There were numerous abrasions about the face and head, and a compound fracture of the left leg. X-ray examination of the skull was negative. Spinal fluid

pressure was 180 mm. of water, and the fluid was blood tinged.

Treatment and course: Patient was on a dehydrating regime with oral administration of a saturated solution of magnesium sulphate. His stupor began to disappear and by the third day he was wide-awake, alert and cooperative. After one week he was transferred home. When seen two months after the accident he had had no complaints or positive neurological findings.

It is this group of cases that experience has taught us that if left alone may develop subsequent symptoms of increased intracranial pressure. In such cases added to a cerebral edema there occurs an arachnoidal tear and there escapes into the subdural spaces spinal fluid. In the absence of any definite absorptive mechanism, if allowed to continue, this collection of fluid is clinically manifested in stupor, head-aches, vomiting, unconsciousness, etc. (Fig. 2). It is after this full-blown picture of increased intracranial pressure develops that subtemporal decompression has netted in a great number of instances dramatic results. If measures such as dehydration and prevention of cerebral edema can be instigated early enough operative measures can be withheld as a trump card.

### GROUP V—MIDDLE MENINGEAL HEMOR- RHAGE

Case VIII. 3194. R.B., aged 7 years, referred by Drs. Star and Fike of Dalton, Ga. Admitted to Piedmont Hospital.

History and examination: The day before hospital admission patient was kicked on the head by a mule. Forty minutes after the accident she became unconscious and had a slow, stertorous respiration. There was slight response to painful stimulation, right pupil dilated, left leg less responsive than the right, and a bilateral Babinski reflex. Spinal fluid clear and over 300 mm. water pressure.

Treatment and course: Through a subtemporal decompression on the right side an epidural clot was removed, the bleeding meningeal artery ligated, the dura opened and, revealing no subdural bleeding, was



closed. By the sixth day patient's aphasia had disappeared and she was discharged from the hospital eight days after operation. Examination one month later showed no neurological residuals.

These cases demand immediate surgical attention and the earlier that such efforts are carried out the lower the mortality rate will be. These cases are not as common as is generally supposed but it is just as well that the possibility of a middle meningeal rupture be always kept in mind for they demand action if a life is to be spared. Where trephining is not practical a ligation of the external carotid artery will hold the hemorrhage in check until a craniotomy can be done, and in rare instances carotid ligation is sometimes necessary with the craniotomy.

Among the rarer types of head injuries encountered may be mentioned the isolated subcortical hematomas, the chronic subdural hematomas, and those cases presenting evidence of damage to the vessels in the tentorial region. The first two groups can be localized usually on neurological examination, and exploratory craniotomy is indicated as soon as the diagnosis can be made. In the group of patients with torn veins of Galen or its tributaries they may be confused with the massive head injuries. These patients with such tentorial hemorrhages are profoundly unconscious, usually presenting pupillary changes, diminished or absent deep or superficial reflexes, with variable pathological reflexes. Convulsive seizures of a decerebrate character are not infrequent. The blood pressure may be normal or slightly elevated and the pulse rate is always rapid. Respiration is usually rapid and irregular in rate and depth. Temperature changes are most common and it is in this group that an extreme hyperpyrexia is encountered (104 to 108 degrees F.). The spinal fluid is very bloody and the pressure below normal. The treatment of these cases is purely symptomatic, requiring stimulants, subcutaneous fluids, hydrotherapeutic attempts to control the temperature upsets and repeated spinal punctures.

The mortality rate in this group is high but occasionally one survives.

Lumbar puncture has about as many advocates for a place in treating head injuries as it has critics. Having very worthy supporters as well as equally as brilliant condemners it must have a place in the management of brain trauma. This prompts a mid-ground stand on the problem, and lumbar puncture has in certain cases demonstrated its diagnostic as well as its therapeutic worth. Blood and particularly the degenerated by-products of old blood will produce an aseptic meningeal irritation as evidenced by temperature changes, rigidity of the neck, stupor, headaches, vomiting, and at times unconsciousness. A decompression unless closed with drainage is the only other method of removing these meningeal irritants. The only other avenue open is the symptomatic care of the patient's discomforts awaiting nature's course. This course sometimes becomes so alarming that intervention seems imperative. In the markedly increased pressure cases with evidence of medullary embarrassment spinal punctures are not without danger. Ofttimes a lumbar puncture will clear the diagnosis of a potential brain trauma case. If such a patient shows no positive neurological findings on examination, the skull plates no evidence of fracture, the spinal fluid clear and under normal pressure, any grave mis-



Fig. 5. As extensive as the fractures are this patient showed no frank evidence of brain damage.

givings that the physician may have relative to any brain damage can be dispelled.

Stereoscopic X-ray studies of the skull are of value in every instance, but here the fracture problem is different than in any other part of the body and an estimate of brain damage cannot be made on X-ray studies of the skull (Fig. 5). No skull radiogram is so important as the patient's general condition and if his condition does not permit this laboratory aid it should be deferred. X-ray pictures of depressions give the surgeon a better estimate of his operative problem, fractures into the skull sinuses are of prognostic value, as well as those linear fractures that transverse the sinuses or arterial groovings (Fig. 6) may make us more alert for subsequent symptom developments.

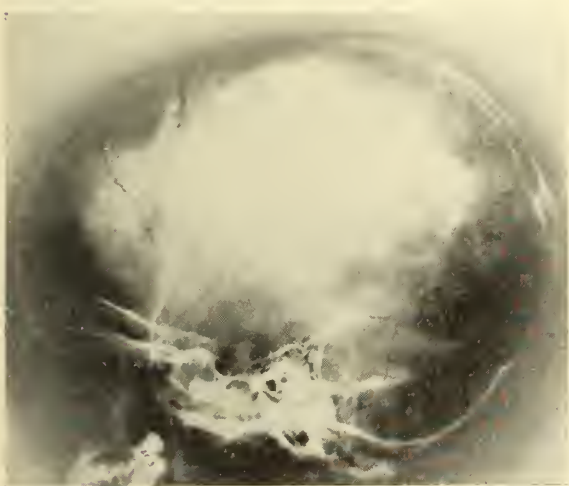


Fig. 6. Such a linear fracture as this should warrant careful observation for the possibility of a middle meningeal hemorrhage.

In summary, the management of head injuries is usually the problem of the nearest physician and if some attempt at systematically grouping these cases is made, proper treatment can be given them, and a more accurate prognosis can be offered. The mortality rate in any large series of head injuries will be in proportion to the number of massive injury cases occurring in that series.

## FRACTURES OF THE ANKLE JOINT

DUNCAN EVE, JR., M.D., Nashville

The ankle joint is a weight-bearing joint, as it bears more weight than any other joint

in the body. The normal movements of the ankle joint are: 20 degrees dorsal flexion, and 60 degrees plantar flexion. No lateral movements take place in the ankle joint proper.

**Potts' fracture:** The name is used to include many lesions which have nothing to do with what Potts described. The outcome is that many physicians still continue to call all fractures of the ankle a "Potts' fracture." A Potts' fracture is not a malleolus fracture. What Potts described in 1756 as a "Potts' fracture" is a fracture of the fibula a short distance above the joint, with a dislocation outward of the foot and a tearing of the internal lateral ligament. A Potts' fracture, as far as the bone is concerned, is a matter of no importance. The outstanding condition in a Potts' fracture is the involvement of the inferior tibiofibular joint, which makes the prognosis debatable and the treatment different from other fractures about the ankle.

In a fracture that is only of the external malleolus, the prognosis is good and rapid, under proper treatment. In a fracture of the internal malleolus, the same is true, or in a fracture of both internal and external malleoli, the same is true; that is, simple reduction and good prognosis. However, if we have a fracture of the ankle complicated by involvement of the inferior tibiofibular joint, we are then up against a problem which requires difficult reduction, reduction for a prolonged period, and delayed weight bearing. In all extensive ankle injuries we should consider dislocations as well as fractures.

Ankle fractures are due in most instances to indirect violence. According to Ashhurst, there are four indirect causes:

1. External rotation.
2. Abduction or eversion.
3. Adduction.
4. Compression by violence.

Ankle fractures that are produced by external rotation: The foot is rotated outward; a strain is placed on the fibula, which causes an oblique or spiral fracture of the fibula into the joint. If the force continues, other lesions may occur.



A Potts' fracture is a rotation of the foot to the outer side, due to forcible eversion and abduction of the foot. In a true abduction, the foot is subjected to an outward torsion strain. However, it seems impossible to have a pure abduction of the foot without some external rotation. In a true eversion of the foot, great strain is placed at once upon the internal lateral ligament. The ligament rarely gives way, but the internal malleolus very frequently snaps off. Many Potts' fractures are produced by leaping and jumping. When the foot is abducted and turned outward, the external surface of the astragalus presses against the inner surface of the external malleolus, and, if the ligaments hold, the fibula breaks in the weak part; that is, within two or three inches of its lower extremity. When this occurs, the upper end of the lower fragment presses against the tibia. However, if the ligaments do not hold, then only the tip of the fibula is broken off at the level of the joint. Next occurs a fracture of the internal malleolus, due to traction on the internal lateral ligament or rupture of the ligament. As the pressure is continued and the weight of the patient's body is brought to bear on the foot, the astragalus is crowded up against the tibiofibular articulation, and, acting as a wedge, forces apart the tibia and fibula and tears the interosseous ligament. If the force continues still further, we have anterior luxation of the tibia on the astragalus. Therefore, a Potts' fracture is characterized by a typical deformity, depending upon the degree of force applied and a giving away of the inner side of the foot.

In ankle fractures that are produced by adduction or inversion violence, usually both fibula and internal malleolus are fractured, the fracture of the fibula being at the level of the joint or just above it, and the fracture of the internal malleolus not at the tip and not a clean transverse fracture near the base as in the typical Potts, but it includes the whole malleolus and is a somewhat oblique fracture into the shaft proper. In addition, there may be a fracture of the anterior edge of the tibia. It is very rare

to have any dislocation of the foot by such violence.

Ankle fractures by compression violence result in a posterior marginal fracture of the tibia. Special attention has been called to such a fracture of the tibia in 1914 by Cotton, whose name is often used in connection with this type of ankle joint fracture, and by Kellogg Speed, who termed it a "lipping" fracture. Such a fracture gives a backward deformity to the foot and is, as a rule, very painful.

Prognosis: Age, occupation, and weight are all important factors. With marked displacement of the fragments or rupture of tibiofibular ligaments, the prognosis is always grave as to perfect function in patients over fifty years of age. However, in young adults, there should be practically little or no deformity or permanent disability.

The average time seems to be between 10 and 16 weeks in cases involving the inferior tibiofibular joint. In one state, the industrial commission shows the time lost to be from 6 weeks to 8 months and the permanent disability from none to 50 per cent. In New Jersey, the state commission examined, in 1930, 257 cases of fractures of the ankle and the following is an estimate of the disability allowed. These examinations were made in regard especially to motion, strength, and weight bearing.

16 cases.....	5%	21 cases.....	40%
29 cases.....	10%	18 cases.....	50%
34 cases.....	15%	17 cases.....	60%
39 cases.....	20%	13 cases.....	75%
21 cases.....	25%	18 cases.....	90%
29 cases.....	33%	2 cases.....	100%

It is, therefore, evident that if ankle fractures are not reduced and treated in the proper way, we are apt to get some disability. I believe stiffness of the ankle joint is the most outstanding condition which causes permanent disability.

X-rays in two planes should always be obtained, and check-up X-ray should be taken after reduction and also other check ups made at intervals.

Treatment: Reduction should be made

immediately. An anesthetic for full muscular relaxation should always be given. Reduction should always be made by reflexing the knee so as to relax the heel tendon. Make slow longitudinal traction. The partial dislocation of the astragalus can best be reduced with the foot in position of plantar flexion; then the hands are placed behind the heel with the thumbs on the dorsum of the foot, and pulled, so that the heel comes down into normal position, and at the same time the tibia is pushed back and the foot forward. Be sure to get contact between the articular surfaces of the tibia and fibula and then place the foot in a neutral position or at right angles to the leg, except a posterior marginal fracture and occasionally an oblique fracture of the fibula. Plaster splints or circular cast are now applied. While applying the cast, press strongly over the external malleolus and opposite pressure just above the internal malleolus, so as to bring the malleoli in contact. Such pressure should continue until the cast is partly dry.

After a few circular casts have been applied, an iron walking heel is embedded into the cast. The writer has been using same in most cases since 1922. It can be applied immediately after reduction or in two weeks' time.

After reduction, the limb should be elevated from 5 to 7 days, at which time the patient is allowed up on crutches, gradually applying more weight upon the iron walking heel each week. In fractures without luxation, the cast remains on from 5 to 6 weeks, while in those with dislocation, from 7 to 10 weeks. Occasionally, in an extensive fracture-dislocation of an ankle joint, it is wise not to allow full weight bearing until the 12th week or longer. The cast extends from the base of the toes to middle thigh in the extensive cases, so as to prevent any possible rotation of the tibia or fibula at the ankle. In using the iron walking heel, it produces muscle activity and, therefore, when the cast is removed, the majority of patients are able to walk without pain in a very short time.

Years ago many advised strong inversion

or supination of the foot. Such immobilization, however, will produce flat foot instead of avoiding it, because flat foot is a supination contracture of the foot and not a pronation contracture. Inversion of the foot is nothing but a position of immobilization and we should be striving to give merely a normal weight-bearing position. When weight bearing begins, the inner side of both heel and sole of the shoe should be raised about one-third of an inch, which will give comfort and take the strain off of the ligaments on the inner side of the foot. If this is not done, we are apt to have eversion or flat foot.

The posterior marginal fracture of the tibia is taken care of in practically the same way except the foot should be in slight plantar flexion for about two weeks, at which time another cast is applied with the foot in normal position.

In regard to the X-ray, I would suggest that a line be drawn on the X-ray plate, through the tibia in the direction of the weight-bearing line, and see where it crosses the astragalus. It should be through the center. If not, we should get a better reduction.

I am convinced that the 5 to 7 days' elevation of the limb after reduction and the iron walking heel represent anywhere from 6 to 10 weeks' saving in convalescence in the more severe cases.

A certain degree of bone atrophy always occurs in bones when placed at rest for a long period of time and this is especially so in bones of the foot when the lower extremity has been immobilized by plaster cast and not allowed any weight bearing for a number of weeks. In a small percentage of cases, especially bones of the foot, acute marked bone atrophy occurs in a short time, and, if the patient is not allowed some weight bearing early, there will be a temporary disability of many months. In such cases, the X-ray will show a patchy or moth-eaten appearance of the bones.

The object of the iron walking heel is to get rid of the swelling or edema, restore normal circulation, prevent bone atrophy, fibrous adhesions and arthritic changes, and



allow the majority of patients to return to some type of work in about two weeks' time; that is, if it is not a medico-legal case.

In closing, will state that the whole story of ankle fractures depends almost entirely on the perpendicular bearing of the tibia upon the astragalus and on its firm connection with the fibula.

## FRACTURES OF THE HUMERUS

JARRELL PENN, M.D., Knoxville

Fractures of the humerus include a large series of injuries occurring about the shoulder and elbow as well as to the shaft. Many of these offer the traumatic surgeon some of his most difficult problems and may result in a rather high degree of permanent disability even under the most favorable conditions. It is, therefore, highly important that each of these injuries receive the most careful consideration and an effort be made to restore the parts to as nearly normal as possible in order that the resulting permanent disability will be reduced to a minimum.

It is not the purpose of this paper to discuss in detail all of the injuries to which the humerus might fall heir, but to emphasize a few of the more difficult ones and mention some of the more frequent pitfalls.

Before discussing those injuries occurring about the upper end of the humerus it is perhaps well to review briefly the anatomy and the muscle action of the shoulder joint.

The shallow glenoid fossa of the scapula furnishes the joint surface for the articulation of the upper end of the humerus. This space is deepened superiorly by the projection of the acromion process which is a continuation of the spine of the scapula and anteriorly by the coracoid process. The upper end of the humerus consists of the head with its articular surface, the anatomical neck, the greater and lesser tuberosities and the surgical neck.

The capsule of the shoulder joint plays no part in holding the head of the humerus in contact with the glenoid and is of much less importance in relation to injury than the capsule of other joints, inasmuch as

capsular thickening or contracture is not a factor in the limitation of motion that might result from injury about the shoulder joint.

The strong system of muscles surrounding the shoulder not only gives this joint its great strength but also are the factors governing the loss of function following injury.

The abductor group consists of the supraspinatus, infraspinatus, teres minor, deltoid and the biceps. The first three of these arise from the scapula and are inserted into the greater tuberosity of the humerus, and while they are powerful muscles their abductor action is relatively weak because of their insertion so near the head of the humerus. The deltoid is inserted much further down the shaft and furnishes most of the power for abduction. The abductor action of the biceps is due to the passing of its long head over the upper end of the humerus before being attached to the coracoid process of the scapula. The power of both the deltoid and biceps is gained by their pulley-like action and to facilitate this action the deltoid is lubricated by the subdeltoid bursa and the biceps by the sheath through which the long head passes, both of these, being lined with synovial membrane, are very susceptible to trauma and inflammatory processes.

The opposing group of adductor and internal rotator muscles consist of the strong pectoralis major inserted into the lateral lip of the bicipital groove below the surgical neck of the humerus, the teres major and latissimus dorsi inserted into the median lip, and the subscapularis inserted into the lesser tuberosity of the humerus.

With the arm adducted or hanging to the side and the hand in the usual position of internal rotation, the abductors and external rotators which are the weakest of the shoulder muscles are put on a stretch and rendered still weaker after the immobilization in this position for a period of days or weeks, while the strong groups of adductors and internal rotators are still more resistant as a result of contracture. The subdeltoid bursa and the biceps sheath are compressed by the tautness of the overstretched muscles so that adhesions occur

between their surfaces, making the restoration of abduction and external rotation extremely difficult if the arm has been immobilized by fixing it to the side of the body. It is then readily seen that the proper position of immobilization of any injury to the shoulder is in some degree of abduction and external rotation. This muscle action also governs the position of the fragments in certain of the fractures of the upper end of the humerus and will be discussed further in relation to their management.

Fractures of the anatomical neck of the humerus offer us but little concern, as true uncomplicated fractures of the anatomical neck occur quite rarely, and are usually seen in elderly patients. There is no muscle attachment to the proximal fragment and it is usually displaced downward on the glenoid by gravity. Reduction can sometimes be accomplished by applying pressure to the head through the axilla while traction is being made on the arm. Even if reduction is accomplished, however, it is difficult to maintain and the best results are probably obtained by complete excision of the head and reshaping the neck to articulate with the glenoid fossa.

Fractures of the greater tuberosity of the humerus occur more frequently and may be seen either in connection with other injuries about the shoulder or independently. They may result from direct violence such as a blow or kick on the shoulder, or from muscle action detaching the tuberosity from the shaft associated with a dislocation or fracture of the surgical neck. The tuberosity is displaced upward and inward and if unreduced, greatly impairs the ultimate functional result of the shoulder. Both active and passive abduction is limited either by pain or by wedging of the free fragment between the head of the humerus and the acromion process. It is, therefore, important to determine whether or not the greater tuberosity has been detached in all fractures and dislocations of the shoulder. If it is found that this has occurred, the detached fragment should be accurately replaced to its normal position and allowed to unite

to prevent permanent limitation of motion. Reduction might be accomplished by immobilizing the arm in complete abduction, that is with the hand over the head. This is rather uncertain, however, and the most satisfactory results are obtained by open operation and securing the tuberosity to its former location with some form of suitable internal fixation, followed of course by proper immobilization for sufficient length of time to allow union to take place.

Fractures of the surgical neck by far outnumber the other fractures seen about the upper end of the humerus and perhaps cause us more concern than any of the other injuries seen about the shoulder. They may be impacted with little or no displacement of the fragments, or complete with wide separation. They usually result from indirect violence and as a rule are more or less comminuted. The upper end of the distal fragment is displaced forward and inward by the contraction of the latissimus dorsi, pectoralis major and teres major, to such an extent that it is frequently seen in actual contact with the ribs. The distal end of the proximal fragment is abducted by the pull of the supraspinatus, infraspinatus and teres minor. The arm is shortened from the shoulder to the elbow and is usually held in the position of slight abduction and internal rotation. There may be an associated injury to the brachial plexus or axillary vessels and it is well to determine whether or not these complications exist before reduction is attempted.

Treatment of these injuries may be either immediate reduction and immobilization in a suitable splint, or gradual reduction by constant traction. For immediate reduction the patient should be anaesthetized with complete muscular relaxation. The body is held firm for countertraction, either by an assistant or fastening it to the table with a sheet. Strong traction is then applied to the injured arm. With the hand in the axilla the distal fragment is pushed upward and backward until the fragments have been approximated. Fluoroscopic control is of much value in reducing these fractures but if this is not available, check-up X-ray films



should be made while the patient is still anaesthetized so that any further necessary adjustments can be made. After reduction has been accomplished, the arm should be splinted in about 45 degrees abduction and slight external rotation. Immobilization in more than 45 degrees abduction is apt to result in a subsequent downward displacement of the distal fragment by the pull of the strong adductor muscles which are attached to the shaft below the fracture line, and in less than 45 degrees abduction permanent limitation of motion may result from overstretching of the weaker group of abductors and external rotators and adhesions of the bursae.

The selection of a splint depends upon the individual surgeon in charge. None of the airplane or abduction splints have proven entirely satisfactory and unless they are kept under constant observation, there is danger of the splint itself displacing the distal fragment downward by its own weight. In my experience a properly applied plaster of Paris cast, encircling the trunk, has proven to be the most satisfactory splint. The body of the cast is applied with the patient sitting up, he is then placed upon the fluoroscopic table and anaesthetized, the fracture is reduced and the arm held by an assistant in a position of about 45 degrees abduction and slight external rotation with the elbow flexed at right angles. Plaster is then applied to the arm and forearm and joined to the body portion of the cast.

If immediate reduction cannot be accomplished, traction may be applied in the position of adduction and gradually abducted five to ten degrees at a time until reduction is accomplished and sufficient abduction obtained for the application of a permanent splint.

Open operation is of course the method of last resort but should be done in those cases where satisfactory apposition of the fragments cannot be accomplished by any of the closed methods.

Separation of the upper humeral epiphysis usually occurs in the late "teens." The mechanism of this injury is quite similar to that of fractures of the surgical neck and

the resulting deformity practically the same. It is essential to secure an extremely accurate reduction of these injuries in order to prevent delayed angulation and deformity from subsequent growth of the epiphysis. If this cannot be accomplished by closed manipulation the surgeon should not hesitate to do an open operation in order that accurate coaptation of the fragments may be obtained.

Fractures of the surgical neck associated with dislocation of the head of the humerus are perhaps the most crippling injuries that occur about the upper end of the humerus. No amount of traction applied to the arm is transmitted to the detached head and the usual manipulative procedures for reduction of simple dislocations are of no avail. If the head has not completely slipped through the capsule it can sometimes be replaced into the glenoid cavity by pressure of the fingers in the axilla while traction is being made upon the arm. This injury as a rule, however, necessitates open operation. At operation the head is replaced to its normal position and the fractured surfaces securely fixed after they have been approximated. This may be found to be impossible, especially in cases of long standing. The entire capital fragment should then be removed and the neck reshaped and placed into the glenoid cavity. A fairly satisfactory shoulder with partial restoration of function may be expected following the complete removal of the head, but of course it does not approximate normal.

Fractures of the shaft of the humerus may be of any variety and occur at any level. They too may be treated by immediate reduction and immobilization or traction. Reduction as a rule is not difficult, but angulation of the fragments is a frequent complication that should be guarded against. Nonunion of fractures of the shaft of the humerus is perhaps seen more often than at any other site of the body. This is probably due to the comparatively unsatisfactory methods of splinting these injuries we have at our disposal. The patient is usually ambulatory, the splint heavy and uncomfortable and the patient is con-

stantly changing his position in an effort to become more comfortable. With this constant shifting of position there is probably just enough motion between the fragments to prevent union. Should this occur, the autogenous bone graft is perhaps the most satisfactory method of promoting union.

Both immediate and delayed paralysis of the radial nerve is still another troublesome complication frequently seen associated with injuries about the middle of the shaft. The resulting deformity is that of a paralysis of the extensor muscles of the hand and wrist or "wrist drop." The treatment of immediate nerve injuries is immobilization of the hand and wrist in the position of hyperextension or dorsiflexion. Should there be no improvement of the paralysis at the end of a few weeks the nerve should be carefully tested for the reaction of degeneration and if found that it has been actually severed, the injured ends of the nerve should be sutured together. Late radial nerve paralysis results from impingement on or incorporation of the nerve in callous. Its only treatment is the surgical removal of the obstruction.

Before undertaking to treat fractures of the lower end of the humerus the surgeon should be familiar with the anatomical landmarks of the elbow. With this knowledge of the normal, the exact type of injury can frequently be determined by simple physical examination. Since this information can be gained with a much greater degree of accuracy by proper X-ray examination, the anatomical landmarks are of perhaps more value in determining the position of the fragments after reduction than as an aid to diagnosis.

The internal and external condyles of the humerus and the tip of the olecranon are the three bony points that bear a constant relation with one another in the normal joints. They may be palpated by placing the thumb upon the external condyle, the third finger upon the internal condyle and

the forefinger upon the tip of the olecranon. In the normal elbow with the forearm flexed at right angles, these three points should be found to be approximately in the same plane with the back of the upper arm.

The carrying angle formed by a deviation from the transverse of both the lower end of the humerus and the upper articular surface of the forearm varies normally within wide limits. The normal for each individual can be determined by examination of the uninjured elbow. This angle should be considered in the management of all fractures that might tend to destroy it, and an effort made to restore it to normal.

In examining the elbow for motion both the normal and abnormal must be determined. We are all familiar with the normal range of flexion, extension, pronation and supination. There is normally no lateral motion in the extended elbow joint. Abnormal lateral motion in either abduction or adduction should be determined.

An acquaintance with these few cardinal points facilitates greatly the management of lower humeral fractures.

Fractures of the distal end of the humerus may be supracondylar, discondylar, condylar, epicondylar and T fractures into the elbow joint. The supracondylar and discondylar might be considered together as their management is essentially the same.

These injuries, although sometimes presenting the greatest distortions seen in elbow fractures, give uniformly more satisfactory results than any of the other fractures occurring about the elbow.

They are most often seen in children and are as a rule the result of a fall on the outstretched hand. The usual deformity is a backward and frequently an outward or inward displacement of the distal fragment together with the forearm, which is held in this position by contraction of the triceps muscle. This gives an appearance of fullness in front of the joint and prominence of the posterior point of the elbow. They may be confused with a backward dis-



location but may be distinguished from this injury by the fact that in the fracture of the lower end of the humerus the three bony points of the elbow retain their normal relation while in the dislocation the two condyles are far forward from the tip of the olecranon. Lateral motion is also present and the carrying angle has been destroyed.

These injuries should be considered emergencies and reduction accomplished as soon after the injury as possible as immediate reduction is much less difficult and the most rapid method of removing the swelling is to restore the parts to their normal relations.

The most satisfactory method of managing these cases is in the position of acute flexion. Reduction should not be attempted except under anaesthesia. With the forearm in the extended position the two condyles are grasped between the thumb and forefinger and while traction is being made the forearm is acutely flexed upon the arm, being careful that the flexion is not too acute to obstruct the radial pulse. It must be remembered that the distal end of the humerus swings forward at an angle of about 130 degrees with the shaft and this forward angulation must be preserved.

In the acutely flexed position the coronoid process in front, the trochlear surface of the olecranon behind, and the fascia posteriorly and laterally, together with the tendon of the triceps hold the fragments reduced and close to the shaft of the humerus. This position also restores the normal carrying angle to the elbow.

The acute flexion is maintained by strips of adhesive tape passing around the arm and forearm. These straps should not completely encircle the arm and forearm but should be cut short so they will only half encircle them, being placed on both the internal and external surfaces. By making the straps short, the dressing is much more elastic than one completely encircling the injured parts and will be less dangerous

should undue swelling occur. The fingers and hand should be watched constantly for the first day or two for evidence of circulatory obstruction. Should this occur, the acuteness of the flexion of the forearm should be lessened even though the position of the fragments is endangered, as a second reduction can be accomplished much easier than the effects of circulatory constriction can be repaired. Volkman's ischemic paralysis follows fractures of the elbow more frequently than any other fractures of the forearm. This fact alone should be sufficient to cause the surgeon to be in constant awe of constricting bandages.

It is best to change the dressing at weekly intervals, giving the elbow gentle passive motion each time. Two and one-half to three weeks is usually sufficiently long to immobilize these injuries after which proper steps to encourage motion should be taken.

The ultimate functional result depends almost entirely upon the degree of reduction obtained. There is practically never any permanent stiffness in the elbow if the fractured surfaces have been accurately approximated, but if this is not accomplished, varying degrees of permanent limitation of motion may result.

Next in order of frequency is the fracture of either the internal or external condyle of the humerus. These injuries present an entirely different clinical problem in children and in adults. In children the difficulties encountered in these fractures may not be seen primarily but are the result of a disturbance of the epiphysis, sometimes producing great distortions of the elbow, both anatomically and functionally, many years after the fracture.

The strong flexor and extensor muscles of the forearm are attached to the condyles of the humerus and when either the external or internal condyle is detached from the shaft by trauma it is usually displaced widely by the pull of these muscles. In order to avoid subsequent deformity from

disturbance of the epiphyseal growth it is essential that the fragments be brought in close coaptation and maintained in this position until union has taken place. This as a rule is impossible by any form of closed manipulation and most of the condylar fractures in children are best treated by an open operation.

Avulsions of the internal epicondyle present practically the same problem. Attached to the internal epicondyle is the strong tendinous origin of the flexor group of muscles. When excessive lateral strain is put upon the elbow the internal epicondyle may be avulsed either separately or associated with the fracture of the internal condyle. Here again the strong pull of the attached muscles prevents reduction or retention of the fragments by the closed method and in order to obtain the most satisfactory results, open repair is usually necessary.

Condylar fractures in adults present a much more optimistic outlook. An immediate satisfactory result is all that need be considered, as growth is complete and if function is restored primarily it will be maintained. Free fragments of condyle may even be removed in adults without serious impairment of function of the elbow.

T and Y fractures extending into the joint offer us perhaps our most serious problems in fractures about the elbow. Time will permit only mentioning them and a few remarks about their management. Neither the closed nor open method of treatment is entirely satisfactory. If reduction is obtained it is difficult to maintain. If open operation is resorted to the extensive damage necessarily done to the soft parts at operation as well as the excess callous that is so apt to follow will leave permanent impairment of motion. The prognosis in these cases should always be guarded and the patient promised the best functional result it is possible for us to obtain but advised from the beginning that the elbow is likely to be far from normal.

## DISCUSSION

DR. E. T. WEST (Johnson City): Next to Colle's fracture, fracture involving the ankle joint is probably the most frequent fracture encountered, and as a class the results are the most unsatisfactory when we study the partial or permanent disabilities following these injuries. This is not only true today, but it was Dupuytren's conclusion in speaking of ankle injuries that "under the most favorable circumstances they almost always leave deformity and lameness which renders progression more or less difficult and painful." While this does not hold good today, one hundred years removed from this pioneer surgeon's observations, still our results are sufficiently unsatisfactory to class these as most serious injuries and fraught so often with serious disabilities.

The use of the X-ray before and after attempts at reduction has done more than anything else to improve our knowledge of the extent and the condition of the injury present in the ankle joint and has most materially improved our skill in working for better functional results.

The treatment of ankle joint injuries calls for immediate attempts at reduction before swelling distorts the tissues and renders reduction more difficult. Full anæsthesia is important so that you obtain complete muscular relaxation before any manipulation is attempted. Early reduction not only relieves pain, but prevents further trauma to the soft parts, and thereby reduces the period of disability. We should be governed by the X-ray findings, and if there is not a satisfactory condition, further attempts must be made at reduction until we get a reduction that will give a satisfactory joint, or as satisfactory a joint as possible, as this is the time to appreciate our shortcomings and not later on hope that time and physiotherapy will do the impossible. Practically all fractures involving the ankle joint can be reduced under anæsthesia, by extension and manipulation by the surgeon, and held by him until a properly fitting molded splint is applied and allowed to set. The leg should be elevated for one week at least following the reduction.

Dr. Bohler of Vienna does his reduction under local anæsthesia with the patient sitting on the table with his knee bent at a right angle. The sound foot rests upon a chair, the fractured foot on the knee of the operator. In case of a general anæsthesia which is much more universal, it is highly important that the reduction be made with the knee of the injured ankle flexed at right angles in order to relax the gastrocnemius muscle.



In abduction fracture the foot should be inverted in order to take care of the separation of the inner malleoli from the tibia, but in adduction fracture the foot is placed in the neutral position. A fairly frequent condition encountered in ankle joint injuries is a posterior marginal fracture of the tibia which may prove a very disabling injury if not fully appreciated and properly handled. This accident is best handled by fixation, with plantar flexion until the fracture has become sufficiently united to allow movement, when it is brought up to a dorsiflexed position. A posterior molded splint is a very satisfactory splint for this injury which is lightly padded and is held in place by a circular cast. Dr. Bohler recommends the use of unpadded molded plaster splints, claiming that he gets better fixation and consequently apposition in this way; however, it has been our experience when we have attempted this without some padding that the splint has to be rather promptly removed due to the marked swelling encountered.

Lile and Edmonds of Seattle in the *American Journal of Surgery* (1933) report an interesting series of ankle fractures in which they arrive at the conclusion that the average length of their disabilities is about fifteen weeks. They stress the minimum time of immobilization, early massage and motion, first passive motion beginning not later than the second week, active motion by the third week, entire cast removed by the end of six to ten weeks, depending on the type of fracture. Weight bearing can then be cautiously started; if the callous is still soft this procedure will be painful and further weight bearing is to be postponed another two weeks.

I think that the use of the walking iron beginning at the end of about ten days, at which time the swelling has materially subsided, keeps the muscles toned up and prevents marked edema and indirectly favorably influences early union. Certainly the patient is much more comfortable and he gets a break on his otherwise more or less complete invalidism.

DR. S. R. MILLER (Knoxville): Mr. Chairman and gentlemen: Dr. Eve's paper has given us a great deal in a very short time. I wish that I could remember all of his discussion about what position was necessary to produce these, but I cannot do that. I think if we could all remember that it would help us in making our reductions.

Of all the things he said I think the most important thing is this red line here: be sure that you have your weight bearing at the right place. If this perpendicular red line goes to either side you cannot get a satisfactory result.

Dr. Eve said the ankle has no lateral motion. I don't think he meant that. I think mine has at least five per cent, probably ten per cent. I don't agree with him on that point.

He said that most doctors were calling practically all fractures about the fibula Potts' fractures. I have never done that. Potts' fracture, in my opinion, does not include the lower inch, but includes the next inch and a half or two inches above.

Dr. Eve has well said that the interosseous ligament is a very important factor when involved in these cases in getting an early result, or in getting a permanently good result as early as possible. He has said that usually where it is not involved your prognosis and your disability are going to be very different.

About the fractures in the lower third of the tibia, especially the oblique or spiral fractures, I know the humerus and the femur more often have delayed union, but most of my delayed unions are in the lower half of the tibia. I think I have four times as many delayed unions in oblique fractures of the lower half of the tibia as I do any other. I have never yet had a delayed or very markedly delayed union in the fibula.

One other thing; in putting up your fractures, especially if you put on a cast, there is usually a great deal of swelling, and oftentimes there are marked blebs about that joint, more than any other unless it is the elbow. It is my habit to cover those injuries where we have a severe traumatism with sterile dressing so that when the bleb forms and breaks, if I don't want to change my cast immediately, I have a sterile dressing in connection with the bleb.

Dr. Eve didn't say much about fractures of the astragalus. Oftentimes we get a small fracture of the astragalus. It isn't very bad, as a rule, but when you get a transverse fracture near the middle of the astragalus and have the anterior fragment dislocated backwards, it is useless to try to reduce that by any kind of manipulation that you can give. I have never seen one reduced. I have seen several cases where great harm was done by repeated efforts of strong men, wearing out first one and then the other, and they all tried it to their hearts' content. The only thing is to do an open operation. I have found one or two of those that I couldn't reduce with open operation. It is better to take that bone out and then close it up, and you will still get a pretty good result with considerable part of the astragalus gone, much better than if you tear off all the articular surface of the astragalus in putting it back.

I want to say a word about these splints that Dr. Malone presented. This might scare some of

you. I think I have a truck load of these, of all kinds and shapes; some of them I have not used for years. I find that a great many cases can be put up with plaster of Paris. There are some, of course, that cannot.

I practiced in the days before we had hospitals in my section, as many of you did. I have a three or four-gallon bucket, with a tight-fitting lid. In that I have cotton, stockingette of two different sizes, one to fit the lower extremity, one to fit the upper. I usually have nonabsorbent cotton for my padding because if it gets wet it doesn't pack like the absorbent; and I have flannel bandages. I put all of that in that bucket, with about eight plaster of Paris bandages, averaging  $3\frac{1}{2}$  to 4 inches. I keep two of those cans or buckets ready. When I get a call to a fracture, I don't know whether it is going to need that kind of dressing, but it is very easy to pick up that bucket and put it in the car, and it seems to me it is a good thing to do. Sometimes you get a case in the home, and if you have that bucket ready it will take the place of a great deal of this apparatus—not all of it, but it is a very convenient thing.

DR. LUCIUS E. BURCH (Nashville): Mr. Chairman, I want to congratulate Dr. Shoulders and the Program Committee on presenting to the general session such an excellent symposium, and also the members who took part in the discussion. I can see that the idea of the Program Committee was to bring before the general practitioners of the state papers of practical importance, for the simple reason that seventy-five per cent of the injured are handled by the general practitioner. This symposium and the discussions that have been brought out today will not only be of great value to the orthopedist, to the general surgeon and to the general practitioners here in attendance, but also to the members not present, who will read it in *THE JOURNAL*. I really feel that this has been one of the most profitable and interesting meetings of the State Society that I have ever attended.

DR. WILLIS C. CAMPBELL (Memphis): I was unable to hear Dr. Malone's paper, so my remarks will be confined to the last two papers, which are most practical.

As to fractures of the ankle, I should like to call your attention to one particular fracture that often gives very poor results, that is the fracture of the fibula with a tear of the internal lateral ligament of the ankle joint. It is very difficult to hold this fracture in position without very efficient fixation. We must protect this fracture and also others at times by apparatus and braces after the patient begins to walk. Of course, the physiological process of maintaining bone structure by walking on

the ankle is the most efficient and the best modern method of treatment in fractures of the ankle.

Dr. Penn has given us a most excellent discussion on fractures of the humerus. All fractures near joints must be reduced absolutely and accurately. Also, very fortunately fractures near joints unite more rapidly than fractures in the shaft of the bone, particularly more rapidly than transverse fractures, and in consequence we can begin function much earlier in these cases than we can in fractures of the shaft. For instance, there is one type of fracture that I would like to mention that Dr. Penn brought out that occurs a great many times in elderly individuals or those above forty-five, in which there is very little separation between the fragments when the fracture occurs at the surgical neck of the humerus. This type of fracture we have treated for some time by simply using a sling and having the patient begin early motion, just as soon as possible, by merely leaning forward and permitting the arm to act as a pendulum, using the active motion of the muscles.

In aged individuals we can prevent, to a large degree, the persistent limitation of motion that we know occurs in all of these cases where we immobilize them a long period of time.

In the treatment of fractures, of course, one of the most important points for the general practitioner to realize is the fact of early immobilization, in fact "splint 'em where they lie" for transportation. I think that is a point that is often unrecognized. We see too many cases with severe shock that could have been prevented if efficient immobilization had been applied.

It is not possible for all of us to have a Thomas splint or various materials, such as this display here, at hand for immediate use, but we can use ordinary common sense in immobilizing fractures. For instance, fracture of the femur in an adult is sometimes a severe injury and sometimes attended with severe shock. If a simple board is applied, going well upon the axilla (we have to immobilize the entire body in these cases), well padded, and then an internal lateral splint from the perineum down to the heel, the board on the outside extending from the axilla to the heel, and bound snugly over the affected region, so that patient can be transported with great ease. I have seen a great many doctors in the country who had the forethought and common sense and mechanical ability to apply such a splint for transportation. I have found it very efficient and satisfactory.

In the upper extremity the same is also true that we must be very careful at the time not to immobilize a fracture just above the elbow joint, particularly the lower third in which we are likely



to have displacement of the lower fragment with pressure on the brachial artery. If immobilized in the straight position I have seen this pressure cause gangrene and loss of an arm, which should be avoided.

DR. J. F. GALLAGHER (Nashville): I want briefly to bring to your attention and illustrate it with a slide or two, simplification of the treatment of fractures by traction. Many of you recall that shortly after the World War the American College of Surgeons appointed a national committee, with state sub-committees (I think Dr. Campbell is the chairman of our state committee) to make a study to the end that they may establish a standardization in the treatment of fractures. After due study that committee came to the conclusion that there could be no standardization in the treatment of fractures, and the function of that committee was changed to a study in the simplification in the treatment of fractures. I think that study is still going on and efforts are being made to impress upon the profession the necessity of the understanding of fractures, their mechanism, and a rational application in their treatment.

In 1912 I read a paper before this society, entitled "The Use of the Hodgen's splint." In 1913, in conjunction with Dr. McCabe, we presented a series of twenty-five cases of fractured femur treated by the use of the Hodgen's splint. I have seen no good reason to change the splint in the treatment of certain lesions of the femur in the years that have passed, only to this extent, that we have added to the principles of the Hodgen's splint the very important principle of skeletal traction.

This series of cases was reported in the *Journal of the Southern Medical Association* in 1913.

(Slide) This slide is taken from the pamphlet published by the College of Surgeons as an outline in the treatment of fractures of the femur. I have denominated this sort of contraption as the Rube Goldberg method of treatment. It really conforms to all the problems of the deformity, but to my mind it is so unnecessarily complicated that it cannot be attempted in the home, and it takes a mechanical genius, so to speak, to rig one up. Here is the support—here through this pulley to this weight through that pulley to there. As I outline this, you almost see the cat run after the mouse that eats the cheese and releases the bucket and the water pours out and lights a cigar, or something like that.

This mechanism is attached to give you support to the proximal fragment. Here is another support that goes to another pulley which downs the weight to prevent toe drop. Here are the ice tongs applied to another pulley and weight to cause

traction. Here is another appliance which goes through this double pulley to another weight to hold the leg in the lower part of the splint.

That is, as you see, an extremely complicated contraption. We have a certain amount of traction here, and countertraction, and it makes little difference whether it is run over a pulley and a weight put on it or whether it is fixed to a support. I have never seen any one anywhere who could tell you how many pounds of sand or lead or what not to put on that to perform this amount of traction. There is nothing there to indicate that.

(Slide) Here is the same principle with the use of the Hodgen's splint. We have simple support with the weight of the leg. We have here the ice tongs, which, by the way, I prefer to the Steinman pin or the Grigsby wire, because they are so easily put in: just local anæsthesia, a small incision in the skin a little longer so as not to have the end of the tongs impinging on the skin, and just one or two licks of the mallet and in it goes. Incidentally, in the application of that ice tong, it should be put a little more to the lower side of the long axis so as to prevent bowing—anterior-posterior bowing.

Here we have a simple support with ice-tong traction. In the meanwhile the limb is fixed in the lower end of the splint and we don't need any traction from the leg in lesions of the femur, they are attached to the lower end of the splint and by this pull it is maintained in there. If the limb weighed fifteen pounds and we can put fifteen pounds there (and use scales if you want to), we would have a resultant pull of thirty pounds. Get some engineer to work out the mathematics of that if you want to. That gives a very simplified method. It has many advantages over this thing here. One of the major difficulties with this is that it rests on the bed and the patient does not move with the same facility that he might if the leg is weighted. You notice we have a moderate degree of flexion to relieve tension on the hamstrings and gastrocnemius.

(Slide) This is not a very good picture, it is taken against the light, but here is a fracture of which I will show you the pathology in a minute, of the upper third in a Hodgen's splint, an oblique fracture. That was put up with skin adhesive in two lengths, four inches wide, an inch from either side stripped up so as to wrap around the first roll, and then the other side is just left out so if we need additional tract we can put it over a pulley by direct method.

(Slide) This is another view of the same patient. You see this wrapped around. Here is a simple way of preventing toe drop. That is a piece of board and that is a piece of adhesive and

here is a rubber band. It is in marked abduction.

(Slide) This gives a picture of the first case I showed you in which there is this comminuted fracture of the lower end of the femur. It wouldn't make any one feel good—it certainly didn't me—to see that X-ray picture.

(Slide) Here are the ice tongs in position and an anteroposterior view of this fracture as you saw it put up in the first picture of the Hodgen's splint.

(Slide) Here is the first view of the fracture of the upper third in the boy in bed with abduction.

(Slide) In a check up in about ten days that did not look promising, so with this extra strip of adhesive that we just left there, we put on a traction over a pulley over the foot of the bed, and the young man told me the next morning, "I felt something slip in my leg last night," and that was a very good slip because that is what happened.

I just call your attention to a very simple method if the pathology is understood and the mechanical application of the splint is correctly applied.

DR. J. J. ASHBY (Nashville): All fractures should be reduced as soon as possible, as soon as we can get to them. They should be treated as emergencies and not left over to be done at our convenience. They should be reduced, if by manipulation, either under general anæsthesia or by the use of local anæsthesia. The muscles should be relaxed. This makes reduction easier and safer and of course keeps the patient from suffering. X-rays should be made, where possible, before reduction in most cases so that one knows just what kind of condition he is dealing with.

After the splinting has been done and the patient has been out from under anæsthesia for twenty-four hours, another X-ray should be made for check up and for your own safety. I say twenty-four hours because the muscle pull after the patient comes out from under the anæsthesia may displace the fragments. If you make the X-ray immediately afterward, while the patient is still under anæsthesia, the reduction may look satisfactory, but it may not be satisfactory after the muscle pull has been exerted upon it.

As to the clavicle splint, the most satisfactory thing that I have used was originated by Dr. Billington and is what he designates a clavicle yoke.

Just one point about fractures of the ankle. Make it simple. I feel if you get a mental conception that these are essentially dislocations of the foot, if you reduce the dislocation of the foot you will, most of the time, get a good reduction of the fracture without remembering all the various types of fractures and the way they are produced.

A great many prolonged disabilities are due to the fact that the patient's foot has not been put

up at a right angle and he can't get his heel down to walk after he gets up.

With few exceptions all ankle fractures should be put up in plaster with the foot at a right angle.

DR. R. W. BILLINGTON (Nashville): I think this is an extremely interesting symposium, and I would like to take this opportunity of speaking for the Fracture Committee of the American College of Surgeons, of which some of you are members and which others know about, whose efforts are being directed to improve the general methods and results in fractures and to try to get your co-operation in enlisting the help of ambulance men and others who have to do with moving fracture cases in accidents which are so frequent now on the highways and in manufacturing establishments. A great deal of damage we know is done in fracture cases by the improper handling of these patients before they ever reach the hands of the surgeon.

As Dr. Campbell mentioned, not necessarily by any absolutely fixed method or those which have been described as preferred by the Fracture Committee of the American College of Surgeons, many methods can be devised on the spur of the moment to partially, if not completely, immobilize the limb that is injured and enable the patient to be handled and taken to the hospital without doing further damage, and they would be of very great service both in the handling of the fracture and in avoiding danger of hemorrhage, shock and death.

There are two or three points I should like to refer to that have been mentioned. I thank Dr. Ashby for referring to this "plaster yoke" dressing, as we call it, which I devised several years ago and described three of four years ago in the Southern Medical Journal. Every one that I have gotten to use it has been enthusiastic about it. It positively, persistently, effectively holds the shoulder in the upward as well as the backward and outward position, which is necessary in the treatment of fractures of the clavicle if you want to get a good union and prevent a low shoulder, which is very important particularly in women. I think it is less burdensome to the patient, and less irritating and annoying, and a great deal less troublesome to the surgeon than any method I have ever seen. I have had a great many favorable replies from men all over the country who have used this dressing.

This splint displayed here for fractures of the femur is an expensive and complicated contraption, and I think nearly every one who has used it has discarded it and gone back to the use of the Thomas splint or even the Hodgen's splint.

In the reduction of Potts' fracture, I want to make one statement. A lot has been said about



inverting the foot. The object is not to invert the foot, but to force the astragalus back toward the internal malleolus. In reduction, don't try to simply twist the foot, not simply to invert and internally rotate the foot, but make your pressure here and here (just above ankle on inner side and against external malleolus on outer side); that forces the astragalus back into position. Of course the foot will be inverted some, but the object is not to simply invert the foot, but to force the astragalus medially to the normal position. If you just twist the foot you may fail in your object of reducing it.

I want to compliment Dr. Penn's paper. I think it is one of the best papers on fractures of the humerus that I have heard. One point I should like to emphasize particularly. We all were taught in the army, when we used the abduction shoulder splint, that the more we abducted the better it was. We have learned better than that. Too much abduction will increase your deformity, will increase your displacement and defeat your object, whereas a less degree of abduction, as Dr. Penn said, perhaps forty-five to sixty degrees in many of the cases (that refers to fracture of the surgical neck) is much preferable to a ninety degree abduction, or anything like that.

DR. R. C. ROBERTSON (Chattanooga): It isn't simply the broken bone that causes disability. Much of that disability comes from injury to the soft parts. Our goal must be the reestablishment of function, as nearly normal as possible, and methods of treatment should be employed which will make most likely the attainment of this goal. The probability of soft tissue injury must constantly be borne in mind and prevented from the time first aid is administered until the patient is discharged. Basic is the principle of "Splint 'em where they lie." In our own section this essential is ignored far more frequently than it is observed.

Next in importance in preventing soft tissue injury is early reduction brought about gently. What the method may be, what the anæsthetic may be, will vary. Then comes some form of immobilization that will not defeat its own purpose, as so often occurs when the aeroplane splint is applied without anchorage to the shoulder girdle. My personal preference is for the simpler type of splint and traction in all fractures. In continuation comes early motion of adjacent joints.

All of these principles are really self-evident, yet they are frequently overlooked. The X-ray, while facilitating the treatment of fractures, has certainly resulted in harm in many cases because of the tendency to treat the X-ray plate rather than to treat the patient. There are generally accepted standards of satisfactory reduction as shown by

X-ray in all common fractures. When this has been obtained, why add further insult to injury by attempting to treat the X-ray?

DR. PERCY A. PERKINS (Memphis): This symposium on the management of traumatic cases has been very instructive, but I would like to emphasize two very simple, elementary things that have already been brought out.

The first is to caution those giving first aid against applying iodine and immediately covering it up with dressings or cast.

The second is to advise that if you put on a cast, either split it or bivalve it and avoid pressure from swelling and possibly a subsequent ischemia.

Within the past week a man having fracture of both bones of forearm was sent to me for treatment. He had on a cast, and his hand was swollen and numb. On removal of the cast I found that he had several skin abrasions, and a badly blistered arm as result of the iodine. This complication, of course, ruled out the question of open reduction and also made it very difficult to apply traction.

These two simple mistakes, I am sure, are due only to carelessness and hurry.

DR. EDWARD T. NEWELL (closing): The gentlemen were very generous in the discussion of my paper in that they didn't refer to it at all, so I will not have a great deal to say in closing.

However, I am going to emphasize all that has been said two or three times on the floor here about how important it is to avoid further traumatization of the soft parts by applying splints when the patient is hurt.

I want to make this broad statement, and I would like for it to go out from this body unchallenged, that any ambulance man or hospital attendant who does not carry at least two splints, one for the upper extremity and one for the lower extremity, to properly splint that limb when he comes to that patient with a fracture, should not be allowed to handle an emergency. There are only two, the Murray-Jones for the upper extremity, which is a very inexpensive splint, and the Keller-Blake for the lower, and anybody can put them on in two or three minutes. It doesn't require any experience. It doesn't require any training of an interne in a hospital. Any ordinary ambulance man that has one or two calls a day can put those splints on properly. If you will note in a large series of cases brought to your institution and X-rayed where the ambulance man has applied a splint to the upper or lower extremity, you will find a great improvement in your first X-rays of the fractures that come to you. You will also find a great improvement in your end results, because

there will be a great number of days that are not required in hospitalization that otherwise would be required if the splints were not applied.

We make it a rule, when a patient is brought up to our sanitarium in a car by some one who has run along and got ahead of the ambulance and picked up the patient and brought him to the hospital, that with the car that goes out to get the patient, one splint goes out for the upper extremity and one for the lower.

When you put a man on the X-ray table and move him about you traumatize him a great deal and increase a great deal the disability.

I have seen a strong, muscular man on an X-ray table that could move and flex and extend his forearm and sever the musculospiral nerve in having an X-ray taken. I have seen that in my own institution. If you have a portable X-ray machine, instead of turning the patient turn the machine, but very few people have a portable machine where they can get to it. If the ambulance man or the man who brings the patient to you comes to your door without having applied the splint, the splint should be applied there before he should be X-rayed.

I want to compliment Dr. Fincher on his splendid paper and to emphasize the point that he brought out that bone trauma does not necessarily mean brain trauma, and that you may have brain trauma where the X-ray does not show bone trauma.

I want also to emphasize the point that he brought out that the close observation of the patient is more important than the X-rays. This point has been brought out by his predecessor that he worked with, Dr. Dyerman, and by Dandy. Dandy especially emphasizes the point that in these injuries to the head, instead of rushing them to the X-ray department, take them to the bed and keep them perfectly quiet and have the temperature, pulse and respiration taken every hour, and you will know much more about them in a few hours than if you had X-rayed them and subjected them to being turned around on the X-ray table.

In regard to this beautiful array of splints, and so forth, I believe that the doctor should make most of his own splints, or there should be a happy medium where the doctor may get some suggestions and some part of his appliances from the instrument makers, but you can make most of your casts yourself and use your molded plaster of Paris splints. Some of these things are of such a multiplicity of pulls and pressures here and there that the ordinary physician cannot completely comprehend them. I believe that we will get our best results in making most of our own splints.

In regard to Dr. Eve's paper, I have little to say. I think that he brought out just the point—that

line he has there is the real check on the whole thing.

In regard to Dr. Penn's paper, he spoke of the use of the Jones position where the fracture is the lower end of the lower fourth or supracondylar, Y-shaped or T-shaped. This is a splendid thing, but I want to caution you about this Jones' position. You have to be awfully careful, as has been emphasized so many times by the essayists here, to watch your circulation, and if you get a complete Jones position you get a beautiful setting of the bone, but you get a complete destruction of the soft parts, and so the angle in which you put up this arm to maintain the bone should be checked by the radial pulse. If you will do that you will keep out of trouble a great many times.

These fractures around the elbow joint are emergencies, especially where you have them brought in to you two or three hours later with the fragments backwardly displaced. They are about as great an emergency as I know of, acute appendix, acute osteomyelitis, or anything else. They require immediate attention and immediate setting. If the swelling is very great, with blebs and blisters and discoloration of the arm, it would be the wisest thing to do open operation in these cases.

I enjoyed especially this paper of Dr. Penn's, as well as the other papers.

DR. EDGAR F. FINCHER, JR. (closing): I don't think I have anything to add except that in the treatment of shock in the very young patients, in children four and five, the most satisfactory thing has been blood transfusions either before, during or after operative interference.

DR. DUNCAN EVE (closing): In regard to Dr. Miller's question as to lateral movement which takes place in the ankle joint proper, such a condition is found in the subastragaloid joint and not in the ankle joint.

Some one asked which bones were more often followed by delayed union. In my experience, I would say as follows:

1. Middle third of radius
2. External condyle of the humerus
3. Shaft of the fifth metatarsal bone
4. Lower third of tibia

Years ago we immobilized such fractures from four to eight weeks, but as a rule these fractures require immobilization for six to twelve weeks before good firm union takes place.

Some one inquired regarding nonunion of the fibula. Will state that it is very rare, due to the fact that the fibula is embedded in muscles.

I have enjoyed all of the papers.



DR. JARRELL PENN (closing): I appreciate very much the liberal discussion given my paper by these gentlemen, and have only a few remarks to make in closing. There is much more to be said about fractures of the humerus than was possible to say in a single paper. The after-care is perhaps as important as the primary reduction, especially in fractures about the joints. Motion should be instituted as early as possible and exercises for muscular development encouraged.

Impacted fractures of the surgical neck of the humerus were only mentioned. These injuries require much less immobilization than the complete variety and motion may be started much earlier.

Fractures of the humerus, like all other fractures, should be splinted for transportation. Much damage to the soft tissues may be avoided and shock greatly reduced by preventing painful motion between the fragments while the patient is being moved. I stated that these injuries should not be treated by fastening the arm to the body. This of course applies only to the permanent dressing.

A very satisfactory method of immobilizing the upper extremity for transportation is to bind the arm to the body. This temporary dressing will be for only a short while and of course there will be no muscle shortening nor adhesions of bursæ during this period.

Compound fractures were not mentioned. Any of the fractures mentioned may be compound and present the usual problems that these injuries present elsewhere.

It is well to emphasize the extreme importance of watching the radial pulse in treating elbow fractures in the Jones position. The arm should be acutely flexed but this flexion should not be acute enough to obstruct the radial pulse. The fingers, hand and radial pulse should be watched almost constantly for the first twenty-four or forty-eight hours for evidence of circulatory obstruction from swelling. Should this occur the dressing should be loosened even if the position of the fragments is endangered as it is much easier to do a second reduction, by open operation if necessary, than to correct a deformity resulting from an ischemic paralysis.

## BRAIN ABSCESS OF THE TEMPORAL LOBE SECONDARY TO AURAL INFECTION\*

SAM H. SANDERS, M.D., Memphis

**B**RAIN abscess as a complication of otitic disease is not, as many have thought, a rare condition. In fact, fifty per cent of all brain abscesses are of otitic origin. This complication occurs most frequently in chronic infections and cholesteatomata, but may occur in acute suppurative otitis. Faunce and Shambaugh, Jr., recently reported three cases of mild acute otitis media complicated by brain abscess that recovered after mastoidectomy and drainage of the abscess. Brain abscesses frequently originate from internal ear disease and also from sinus thrombosis. The otologist is usually the first to see these cases, and, by early recognition and proper treatment, would assist in lowering their mortality rate. Korner first established the fact that eighty-five per cent of brain abscesses are adjacent to the original focus of infection. One is justified in considering any case with a history of otitic infection and a cerebral syndrome as a brain abscess until proven otherwise.

I have limited my discussion to certain factors common to all abscesses of the brain, intracerebral temporosphenoidal lobe abscesses caused by infection from the ear, and a case report.

### THE PATHWAYS OF INFECTION

Infection may occur by direct extension through loss of continuity caused by necrosis of the bone, fractured skull, operative trauma, or halisteresis. If the infection enters an area of the bone containing red marrow, the diploe are infected. The marrow having become infected, erosion of the inner table may take place, but as a rule the infection passes from the diploe to the intracranial structure by means of the blood stream along the diploic veins. Even in

the process of erosion of compact bone, a Haversian canal may be opened and the infection allowed to pass along the blood vessel or tissue spaces of the canal.

Infection may also occur by metastasis by way of the blood vessels supplying the brain, and when this occurs one or more abscesses may form in the area supplied by the affected artery. The blood supply of the cerebral tissue comes from the circle of Willis by two types of vessels: 1. Central branches, which pass directly into the base of the brain to supply the central nuclei and the main mass of white matter; 2. Cortical branches, which pass over the surface and into the fissures, where they divide into a large number of short vessels supplying the gray matter of the cortex only, and a smaller number of longer branches which pass through the cortex to supply a thin layer of the subjacent white matter. These are all end arteries. So there lies just below the cortex, and between the termination of the cortical and central vessels, a flat area of white matter which is relatively avascular. It is in this avascular zone that abscesses originate.

If infection gains entrance by means of the venous blood stream, the majority of abscesses are formed by the process of septic thrombosis, thirty-three per cent of which localize in the cerebellum.

Infection cannot enter the intradural structure by means of the lymphatic system, for there is no communication with the lymphatic vessels of the extradural structures. A lymphatic system takes origin in the internal layer of the dura, the lymph spaces and vessels linked with it passing mainly through the foramina in the base of the skull and draining into the superior deep cervical lymph nodes. The system is closed on the cerebral surface of the dura and has no connection with the pia-arachnoid spaces.

\*Read before the Tennessee Academy of Ophthalmology and Otolaryngology, Chattanooga, April 9, 1934.



## INFECTION BY AUDITORY APPARATUS

The pia-arachnoid membrane supplies a covering for the auditory and vestibular nerves in the internal acoustic meatus, that further extends into the labyrinth, thereby opening the way for the spread of infection from the inner ear to the leptomeninges in the posterior cranial fossa. The perilymph lying in the space between the bony and membranous labyrinth communicates directly with the cerebrospinal fluid through the aqueduct of the cochlea. Finally, the infection may travel through the ductus endolymphaticus connecting the endolymphatic space of the labyrinth with the dura in the posterior fossa. The duct terminates in the saccus situated between the layer of this membrane where it covers the posterior surface of the petrous pyramid. Forty-four per cent of the abscesses formed by infection entering the brain from the internal ear are found in the cerebellum.

In adjacent brain abscesses, or those occurring from direct extension, the original infection gradually spreads until it reaches the dura, causing a pachymeningitis. An extradural abscess may form. The pachymeningitis causes a subjacent leptomeningitis. Adhesions are formed between the membranes and the brain, shutting off the infected area from the main subarachnoid space. From this area of localized meningitis, infection passes into the brain substance by the perivascular, venous or arterial routes.

There is some discussion as to which route the infection takes, but Atkinson states that the perivascular route is the most common, and the venous route next. The abscess would form in the center of the white core of the lobules or avascular zone regardless of which route the infection took. However, the direction of the extension is backward to the center of the infected lobule. If of venous origin the cortex is damaged and extension follows the course of the thrombosis destroying the cortex. Therefore, the abscess is more likely to extend to the surface and break into the subarachnoid space, which would cause a generalized meningitis. An abscess produced by direct

extension from aural suppuration would most likely be found in the temporosphenoidal lobe.

## DIRECTION OF EXTENSION

As an abscess increases in size, it extends in a definite direction. In the cerebrum it increases at the expense of the white matter, and along the course of the vessels inward toward the lateral ventricle. If the process is very acute the ventricular wall is more likely to be perforated than if chronic, for in the chronic cases the choroid becomes adherent where the perforation is threatening, having a similar protective action to the omentum in the abdomen.

## CAPSULE FORMATION

Much confusion has resulted from the use of the term capsule in describing a brain abscess. There is no true capsule present. It is nothing more than the wall of an abscess cavity made up of the supporting tissue of the brain. In infections of low virulence the abscess is more likely to become walled off than in cases with low resistance and fulminating types of infection. The wall of the cavity consists mainly of fibrous tissue of variable thickness. External to the fibrous layer is a zone of encephalitis varying in extent and degree. The internal layer of the wall consists of capillaries contained in a supporting tissue of endothelial cells, leucocytes, neuroglia cells and fibroblasts.

## STAGES OF ABSCESS

Brain abscesses may be considered as having two stages. The manifest or active stage, and the latent or dormant stage. The disappearance or improvement of symptoms characteristic of the latent stage should not produce a false sense of security. There will be a return of the manifest stage ushered in by elevation of temperature and increase of symptoms denoting extension of the abscess or complications.

## GENERAL SYMPTOMS

General symptoms begin with the onset of intradural suppuration manifested by chill or chilly sensation. There is a loss of appetite, coated tongue, and later a dry

skin, and general malaise. Headache on the affected side is always present in some form and aggravated by straining, exertion or elevation of temperature. Nausea or vomiting may occur. The symptoms are usually out of proportion to the findings. There may or may not be an elevation of temperature after the onset. Usually there is not. The temperature is often subnormal except in the manifest stage. As the abscess progresses, the symptoms of increased intracranial pressure become more marked.

### LOCALIZING SYMPTOMS

The two most constant symptoms in temporal lobe abscess are hemianopsia and aphasia. The original focus of infections from which the abscess has developed must be considered in localizing the lesion.

It is also important to eliminate the cerebellum as the site of the infection following aural suppuration for an adjacent abscess from the ear, if not metastatic, will be situated either in the temporal lobe or cerebellum. If in the absence of spontaneous nystagmus cold caloric in either ear in the upright position gives a normal nystagmus and normal vertigo, the cerebellum can probably be excluded.

### APHASIA

When an abscess originates from a retrograde thrombophlebitis, the second temporal convolution is usually involved because of the vascular arrangement. In right-handed persons, this is the silent area and produces no outstanding symptoms, but when on the left side a naming aphasia is produced.

Aphasia is usually present before noticed by anyone. It may be complete, incomplete, transient or imperfect. There may be a word deafness or total deafness if the lesion is bilateral. The cortical centers of hearing are bilateral and located in the transverse temporal gyri of Heschl and the posterior two-fifths of the first temporal convolution. Word deafness is shown by an absence of adaptation of words to ideas and ideas to words. Agraphia, alexia, paraphasia, amnesic, and sensory aphasia

may be present, but optic or naming aphasia is by far most common.

### HEMIANOPSIA

May be transient or fixed. It is due to the involvement to the associated fibers running from the cortical optical centers in the cuneus which passes through the temporal lobe to the geniculate bodies (cunio-pulvinar or Meyers tract). The tracts are caught between the abscess and the distended ventricle. Frequent examination is necessary, as the hemianopsia may be transient for both field and color. On the other hand, when present, it may last for a long time after the abscess has healed.

### FACIAL PARALYSIS OF OPPOSITE SIDE

This is the first manifestation of involvement of the motor area. There is a paresis (cortical type) of certain muscles of the lower portion of opposite side of the face. This is elicited only by spontaneous emotional movements, such as laughing. The lower portion of the face is flattened. The eye does not close reflexly as frequently or so completely as the other, but can be closed on command.

### PARALYSIS OF CONTRALATERAL ARM

A weakness, paresis or paralysis of the arm on the side opposite the lesion may be present. The leg may be similarly affected.

### CONTRALATERAL HEMIPLEGIA

Complete hemiplegia in temporal lobe abscess is very rare. It can be differentiated from a vascular lesion by its progressive nature beginning in the face, then arm, and lastly in the leg.

### OTHER SYMPTOMS

1. Pain in the teeth, together with pain behind the eye on the side of the affected hemisphere due to the involvement of the Gasserian ganglion at the apex of the petrous pyramid.

2. Pain behind the eye probably due to irritation of the ophthalmic branch of the trifacial in the middle fossa. Bilateral post-ocular pain is caused by a distention of the



lateral ventricle from an obstructed internal hydrocephalus. The distended ventricle causes irritation of the distribution of the fifth nerve through the dura, and a general headache follows. The third and sixth may also be affected by pressure.

3. Convulsions occur in about fifty per cent of tumors of the temporal lobe, but they are rare in abscesses. The cause is supposed to be from pressure involving the vascular system of the middle central area.

4. Dreamy state—this is often overlooked or mistaken for a semisomnolent condition. It apparently is more marked in lesions on the right side contrasting to the aphasia in the left in right-handed individuals. The family may say that the patient was out of his head on a certain date or has not been himself.

5. Uncinate symptoms—taste and smell. There are very few cases recorded involving the taste or smell, but as the anatomical sites of these centers are in the anterior poles of the temporal lobe which are so frequently involved, it would seem that these symptoms might be found more often if looked for.

6. Signs of ventricular rupture. When an abscess ruptures into the ventricle a fine vertical nystagmus develops. Ruttin advises the operator to see the patient immediately before attempting to drain the abscess to make sure a rupture has not taken place before operation.

## PREVENTIVE TREATMENT

The best treatment for brain abscess would be preventive. Cleaning up chronic infections in the ear, removal of cholesteatoma when indicated. Complete extirpation of all infected mastoid cells at time of operation, and many other similar procedures might prevent the formation of some abscesses. More could be done to prevent complications in chronic conditions than in the acute.

## TREATMENT

When we are dealing with an acute abscess of the temporal lobe originating from a focus in the ear, we may assume that the

infection has gained entrance by direct extension. If this is true a walled-off area may have formed through which we can enter the abscess cavity with very little danger of spreading the infection. If there is no apparent change in the dura, which would lead us to believe there was no direct extension of the infection, the exposed area can be coagulated, sealing off the cerebrospinal fluid and thereby lessening the chances of meningitis. At least three days should elapse before an exploratory puncture is made through this prepared area. A longitudinal slit is made in the dura, through which a blunt needle should be inserted toward the center of the brain not over one and one-half inches because of danger of puncturing the ventricle. If no pus is obtained a puncture should be made forward, then backward. A knife can be used if it is thought that the pus is too thick to drain through the trochar. When the cavity is found, the exploring instrument should not be withdrawn, as the cavity may collapse. A drain should be inserted using the exploring instrument as a guide, taking care not to traumatise the tissue or break down the abscess wall if one is present. If the abscess is properly walled off and latent there is a possibility of enucleating the entire abscess. This should not be attempted through the tegmen or any other infected area. The exposure should be large and the operative field clean.

## CASE REPORT

Negative findings omitted.

L. S., white, male, age 18, was taken ill with measles about November 1. An acute mastoid developed. Simple mastoidectomy right performed on November 28. Thirty-two days after operation the patient was readmitted to the hospital. I first saw him January 5.

## HISTORY

Slight chill Christmas day, followed by nausea, vomiting and vertigo for five days, during which time the body temperature was above normal. The symptoms gradually subsided.

## PRESENT COMPLAINT

Pain behind and in eyes. Sensation of eyes being pushed out of sockets. Headache worse on right side. Bad dreams, and restlessness at night, nausea. The internist stated that this boy was not like himself. He was quiet, sloven and irritable, while on his previous admission he was friendly, mischievous and likable.

## EXAMINATION

Temperature normal, pulse eighty-four, blood pressure 118.80. Leucocytosis varying from twelve to fifteen thousand with seventy-five per cent polymorphonuclears. Patient inattentive and slow to answer questions. Vision 20/20. Choked disc four diopters on the right and three diopters on the left. The retinal veins engorged. Hemianopsia. Healed right mastoid scar. Tenderness over right parietal region on precussion. Mild tubal catarrh right. Drum intact.

X-ray: Many cells of increased density in tip, zygomatic and antral region.

Spinal Puncture: The operator being asked to withdraw a small amount of fluid very slowly. Cell count twelve, eighty-one per cent mononuclears. Faint trace of globulin. Sugar, forty-four mgm. per hundred cubic centimeters.

## DIAGNOSIS

Brain abscess right temporal lobe.

## OPERATION

Simple mastoidectomy right. Grayish red and thickened dura exposed through tegmen. Longitudinal slit made in dura and blunt needle inserted inward and slightly forward about one inch. Abscess cavity entered, a drain tube inserted along the trochar and fastened in place. Wound left open and allowed to drain for six weeks.

## RESULTS

Apparently an uneventful recovery to date (three months). A choked disc of two diopters on the unoperative side still persists.

## SUMMARY

1. Brain abscess is a frequent complication of otitic disease.

2. The otologist is usually the first to see these cases and is in a position to make an early diagnosis.

3. There is no true capsule present in brain abscess.

4. Naming aphasia, accompanied by hemianopsia, is pathognomonic of left temporal lobe abscess.

5. Proper attention to acute and chronic ear disease would prevent most intracranial complications.

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## DISCUSSION

DR. M. M. CULLOM: This is really a very valuable paper that Dr. Sanders has prepared on brain abscess. It is exhaustive and covers the field thoroughly.

I am more or less pleased that my discussion of brain abscess is largely academic. I had been practicing fourteen years before I had my first operative case of brain abscess. I had had one case previously that refused operation who went back to his home in a near-by town and died without surgical aid.

Dr. Sanders says that abscess of the brain is not infrequent. It may not be infrequent in dispensary practice, but in private practice I think it is quite infrequent. I can recall only five cases that have occurred in my private practice in thirty-five years. I saw a number of cases while on the house staff of the Manhattan Eye and Ear Hospital. The result in the hospital was invariably fatal, and my experience in private practice has been no better. The house surgeon's announcement that the consulting neurologist had been called in would elicit the remark, "Then get out the old death certificate." The fact that brain abscess is so infrequent in private practice is undoubtedly due to the fact that people who are



able to employ a physician or otologist are not neglectful of chronic discharging ears as they once were. In the cases I have seen there was evidence that chronic purulent otitis media had been present a long time. This, of course, is not true in abscess following an acute otitis media. For the above reason I think we will do our greatest work in the realm of prophylaxis. People must be impressed with the grave dangers inherent in a discharging ear and the paramount importance of treatment to clear up the condition. Not only does the ear call for treatment, but the cause of the discharging ear must be investigated. This brings me to my favorite hobby, the influence of purulent sinusitis upon purulent infection of the middle ear. My contention, which I have been promulgating for fourteen years, namely, that at least 85 per cent of purulent infections of the middle ear is associated with a purulent sinusitis, has now been definitely proved by the work of various men in different parts of the country. So that every case of chronic discharging ear should be rigidly examined for purulent sinusitis. If you have not done so you will be surprised to find out how often your chronic discharging ears will have purulent sinusitis on the same side. You may be surprised, too, to see how a chronic purulent otitis media will clear up after the sinus has been cleared up.

My first case of brain abscess was located in the left temporal lobe. A boy eighteen years old had had a chronic discharging left ear since infancy. He was operated on in a state of profound coma. Previous to losing consciousness he was completely paralyzed on his right side. He had left facial paralysis and complete aphasia. When I opened the abscess after exposing the dura above the tegmen, it was incredible the amount of pus that escaped. The odor was sickening and we could hardly stay in the room. I inserted a drainage tube and dressed the wound daily. The paralysis disappeared gradually and he regained his speech. He appeared to be out of the woods when he went home at the end of five weeks, but on the forty-second day he apparently had a rupture into the ventricle and died in an hour.

We are all indebted to Dr. Sanders for this masterly presentation of the subject of brain abscess. He is to be warmly congratulated on the successful outcome of his case of this dread disease. The technique of the operation for brain abscess has undoubtedly been greatly improved and the chance of a successful outcome is now much better, but just the same I will be just as well pleased if I never have to operate on another case. I am perfectly willing for the other fellow to put up with the nerve-racking anxiety that attends such cases.

DR. W. W. WILKERSON (Nashville): It is very gratifying to have one of our confreres sufficiently interested in endoscopy to bring this subject to our attention in such a striking manner. It is significant that such strides are being made in a long overlooked field of our endeavor.

Despite the fact that I have discontinued the practice of endoscopy, I am nevertheless an endoscopist at heart and shall always be vitally interested in the work.

The slowness which has characterized the growth of endoscopy largely has been due to the fact that general surgeons have not been particularly interested in surgery of the chest. This has been overcome to a major degree in the past few years. We now have surgeons who are not only actively interested in pneumothorax, lobectomy, thoracoplasty, etc., but who have perfected their technique in the light of present knowledge.

Apparently, therefore, this is an auspicious time for thoracic surgeons and endoscopists to join their hands for a greater manifestation of health to mankind.

At this point let me beg of you, who refer your foreign body work, to give the endoscopist your real cooperation. I can make this plea without fear of being misunderstood, as I am no longer a true endoscopist. First, do not rush him into the operating room. He must have sufficient time to study his case and to satisfy himself that he is in possession of enough facts and proper equipment to make the mechanical problems as simple as possible.

A surgical team accustomed to each and every move is essential for a low mortality. Therefore, have an understanding mind, and take the patient where the surgeon desires. It also may be of comfort to know that most inorganic foreign bodies in the bronchial tree do not per se constitute an emergency.

Any number of such foreign bodies have been reported where they have remained in situ for literally months and years. Jackson, Crow and others have reported such cases. I personally have removed from the lung foreign bodies that have been present up to twelve years.

The greatest studies in recent years have been in the treatment of lung abscesses and the diagnosis and treatment of new growths.

In lung abscesses it is self-evident that the bronchoscopic method of drainage, lavage, etc., has added many cures, which were incurable otherwise. Statistics are ample to satisfy the most dubious.

It is rather ironical that new growths near the hilus of the lung are quite accessible and therefore most easily diagnosed, yet they can be removed in only a few cases. New growths in the smaller bronchi are difficult to find with a bronchoscope and yet can be removed surgically.

The same rule is applicable here as elsewhere, the earlier the removal the lower the mortality; late removals are useless except in certain cases for relief of symptoms.

It therefore behooves us to use all of our scientific skill and equipment in order to obtain an early diagnosis. Here consultation is most important. In these cases may we use it in the fullest manner.

Lobectomy in cases of new growths following

an early diagnosis has a lower mortality, as there is an absence of infection, and metastasis is less likely. It is significant that the mortality is lower in such a case than in lobectomy for bronchiectasis.

Metastasis from the regional lymph nodes most commonly finds its way into the central nervous system.

Fistulae between the esophagus and the tracheobronchial tree are not uncommon. Many such

cases, congenital in type, have been reported. These terminate fatally in the first weeks of life. Cases in later life can usually be diagnosed by the endoscopist with the aid of a roentgenologic examination. Unless the cause is malignancy or some incurable disease, many of these, with appropriate treatment, are cured.

In closing, let me say that I appreciate having a part in the discussion of a field of ever-increasing importance. I thank you.



## PERINEPHRITIC ABSCESS: REPORT OF CASE\*

MARCUS G. SPINGARN, M.D.,\*\* Memphis

**O**WING to the numerous classifications and titles applied to the lesion perinephritic abscess, let me outline just what is defined by the term in this paper.

The abscess by some is called primary, that is infection, staphylococcal in origin, metastatic from some other point, such as the skin, the infectious diseases, measles, chicken pox, influenza, and suppurative lesions, elsewhere other than of staphylococcal origin. The analogy is similar to tuberculosis of the kidney, usually called primary.

The term secondary refers to the perinephritic abscess following some local kidney infection, perinephric abscess. The classification renal and extrarenal is becoming more popular. Renal analogous with the secondary, extrarenal analogous with the primary.

Perinephritic abscess occurs in the structure known as the perinephrium. Anatomically it is a lemon yellow colored layer of fat surrounding the kidney and enclosed within the renal fascia. It is absent at birth, scant at puberty, well developed in adult life. It is also known as Gerota's fascia (1). This fascia of fat has its own blood supply, a branch from the renal just before or after bifurcation, a branch from the first lumbar, and branches from the intercolumnar arteries of the renal cortex. (This is depicted by lantern slides.)

The lymph supply comprises three sets (2). First, those from the cortical portion of the kidney. Secondly, there is a set immediately beneath the capsule and communicating with the first. A third group lies in the perinephrium and drains independently into the upper lumbar group of nodes and the subscapular vessels.

Now, an organ which has its own blood supply and lymph supply is certainly subject to its own disease entity, primary peri-

nephritic abscess, staphylococcal in origin or extrarenal in contrast to the more serious secondary type, the perinephric or perirenal type. In the primary, simple incision and drainage is all that is necessary for a cure. In the secondary or perinephric type, incision and drainage is merely a preliminary measure to the treatment of the underlying cause.

Statistics from the New Haven, Conn., hospital for the past twelve years show that 99 per cent of the primary got well, against 43 per cent of the secondary or perinephric type.

Case Report No. 2998—St. Joseph's Hospital—History by Dr. Chandler.

White, female, age 11 years.

Patient was admitted on pediatric service, complaining of pain in left kidney region. Onset of present illness was insidious about three weeks before admission to hospital. Condition had grown progressively worse and patient had been confined to bed for the latter two weeks, running a low-grade temperature, usually higher in the afternoons. Pain was of a dull, aching character and did not radiate, but she complained of discomfort when back or leg muscles were brought into play. Mother had noticed that child leaned to the left side when walking. Appetite poor. No nausea or vomiting. Bowels regulated by drugs. Stools soft yellow-brown.

No chills, jaundice, or cardiorespiratory symptoms. G. U. nocturia 1-2x. No dysuria or hematuria.

Past history: Child had measles two months ago and had never seemed completely well since. General health prior to that time had been good, however. No diphtheria, scarlet fever or pertussis. No sore throats. No previous hospitalization.

Family history essentially negative.

Physical examination: Temperature 101, pulse 100, respiration 22.

General appearance was that of a malnourished and somewhat anemic young

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\*\*From the Urological Department of St. Joseph's Hospital, Memphis, Tenn.

female, fretful and complaining of pain in back. No lymphadenopathy.

Skin: Loose, dry and warm. Papulo-squamous eruption on abdomen, and thorax with fading erythema.

Head, eyes, ears, and nose, all negative.

Mouth: Teeth, fair; tonsils, small and cryptic.

Chest, negative.

Heart: Tachycardia, otherwise negative.

Abdomen: Flat.

Liver, normal. Spleen, not palpable.

There was exquisite tenderness to pressure over left kidney region extending anteriorly to left side of abdomen. There was pain on movement of left leg or whenever back muscles were brought into play.

Extremities: Neurological (negative). Laboratory (on admission).

Blood: B.B.C. 3,580,000. Hbgl. 64 per cent. W.B.C. 20,400. Diff. PMN 81 per cent. (300 cells) lymphs 14 per cent. Monos. 1 per cent. Myelocytes 4 per cent.

Urine showed specific gravity 1.006, and a very faint trace of albumin; otherwise negative.

Provisional diagnosis at this time was (1) perinephritic abscess, or (2) psoas abscess.

On August 14, 1933, a retrograde pyelogram was made, using 12½ NaI. This showed the lower calix of left kidney to be effaced as if by extrinsic pressure. Bladder mucosa normal.

Repeated urinalyses were negative. Child continued to run a septic temperature of increasing severity with a maximum of 104. During this time patient developed an upper respiratory infection with severe cough. An X-ray of chest on August 16, 1933, showed left diaphragm to be elevated. No free fluid. The density of both hilar shadows were increased with one calcified gland on left side, otherwise negative.

On August 16, 1933, it was noticed that affected area was beginning to fluctuate (superficial).

On August 16, 1933, patient was carried to operating room and under ethylene anaesthesia a left kidney incision parallel with 12th rib was made. There was drainage of a large amount of thick creamy pus from cavity surrounding upper pole of kid-

ney. Cigarette drain was put in place and incision closed with silkworm sutures. A smear and culture taken from wound showed staphylococci. Patient was given general supportive postoperative therapy including one blood transfusion of 340 cc., August 19.

Drainage from wound was profuse for several days, but temperature subsided. Pain disappeared and general condition became rapidly improved, and subsequent examinations during the past several months show child to be in perfect health. Last examination was on February 20, 1934. Kidney was not explored at operation, and the uneventful recovery proved this procedure to have been justified.

In view of the fact that the perinephrium is an organ with its own blood and lymph supply the conclusion drawn is that we have primary perinephritic abscess, metastatic staphylococcal in origin.

(2) That simple incision cures.

(3) That it is to be differentiated from perinephric abscess, in which case the kidney is involved, and this is not always easy to do.

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#### DISCUSSION

DR. J. B. NEIL (Knoxville): This is certainly a very interesting subject. The doctor did not say anything with regard to diagnosis. This is a condition that frequently is very, very difficult to diagnose and masquerades under a great many various diagnoses. These cases usually come into the hospital from one to four weeks after they have been in progress. I have had a case recently that ran a temperature for several months before the diagnosis was made.

The X-ray findings, of course, are very indefinite in these cases. They usually don't show you anything. The cystoscopic examination usually doesn't show anything. The main X-ray findings are the raised diaphragm that the doctor speaks of and obliteration of the psoas muscle.

One point he didn't bring out was the pathway of infection reaching the kidney. Rolnick has brought out in experimental work that there is a pathway, that hasn't been spoken of, of extension through the ureteral sheath. He proved that, or claims to have proved that, experimentally on fresh post-mortem specimens by injecting the sheath; he first injects the lower portion of the cellular tissue around the ureter in the re-



gion of the bladder with sodium bromide, 25 to 30 per cent solution. He can milk that up the ureter along the sheath. He also injects the sheath at varying distances, and can, through radiograms, demonstrate this sodium bromide extending up the sheath. That is very important, especially in prostatic work. In infections in the pelvis in the female we see it. I have had three cases following 87 prostatic resections where the patients developed perinephritic conditions. But they cleared up without operation. It is not rare at all.

Channing Swann, of Massachusetts General Hospital, reviewing 114 cases over a period of nineteen years, would seem to differ from Dr. Spingarn in the question of the way this infection reaches the capsule. Most of his cases were examined post-mortem, and he claims that this infection

reaches the perinephritic portion or the fatty capsule through an infection in the cortex. Of course, that is a moot question.

In the cases I have seen I can't tell, because I have only done simple drainage. I had a case that had a kidney shot through with small miliary abscesses. There was no involvement at all of the fatty capsule. This kidney was a functionless kidney and there seemed to be no spreading of the infection at all.

I think this is a very important subject because it is so frequently overlooked, and I would advise that in any condition where the patient is running a temperature of obscure origin, you should keep in mind this question of perinephritic infection. I wish to compliment Dr. Spingarn on this splendid presentation.

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H. H. SHOULDERS, M.D., Editor and Secretary

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## EDITORIAL

### POSTGRADUATE WORK

There are many ways by which postgraduate education is done by a doctor. First, is that valuable education which comes from experience with sick people. Second, the education which comes from an exchange of opinions and experiences with other doctors. Third, the education which comes from reading current medical literature. Fourth, the education which comes from scheduled postgraduate courses.

It is becoming increasingly apparent that the first three are the most important factors in keeping the medical profession abreast of the times in medicine.

Some man once said that the doctor who reads two hours each day will be a leader in his profession. The statement may be an exaggeration but it has a large element of truth in it. Doctors certainly do not become leaders without reading.

The State Medical Association is fostering a movement designed to emphasize and to bring into general use the three methods referred to without discounting at all the value of the fourth. To accomplish such an end it is necessary to rearrange local medical societies in many communities with the end in view of combining the smaller ones into larger units. Their idea is to secure such combinations for scientific work only without interfering with their constitutional status in the State Association. This movement should receive the full support of the entire profession.

Dr. W. H. Witt is chairman of this committee on postgraduate education. He has

approached his task with enthusiasm on account of the great value he sees in it.

### BUREAUCRATIC MEDICINE

An employee of the Tennessee Emergency Relief Administration received an injury while working on the project of remodeling a building for the Tennessee State Health Department.

He reported the injury to his timekeeper. The timekeeper referred him to the engineer's office. The engineer's office referred him to the welfare commission. The welfare commission made inquiry as to who his "case worker" was. He gave the name of the case worker. He was then told to wait. He waited. Then some one gave him a note to the Nashville General Hospital. He went to the hospital but when he arrived the afternoon clinic hours were over and the attending doctor had left. The patient then went home and later consulted his neighborhood druggist. The next morning he went back to his case worker and his case worker took him to the Nashville General Hospital where treatment was administered *without charge*.

The foregoing is the substance of a story told by an injured man on relief work.

Strange as it is, a complaint was made against the Nashville General Hospital for *its failure to give the man prompt attention*.

This is an example of bureaucratic medicine. It is an exaggerated example, of course, but it represents what happens when lay people undertake the job of directing the affairs of other people. So many directors spring up that the poor patient and the doctor both are left in a state of confusion and most if not all the alleged economies are dissipated in the cost of administration.

It is interesting to observe in this connection that every person contacted by the injured man draws a nice salary, except the one person he really needed, i.e., a doctor to take care of his injuries.

There are a lot of so-called "socially-minded" people who are imbued with the idea that if they are given a sufficient amount of *money* and a sufficient amount



of *power* they can bring about revolutionary improvements in the services rendered sick people. The wonder is how they get that way.

Certainly anybody, whether educated or not, can find some fault with most any human individual, and with most any human agency. Nobody with sense would pretend to insist that any human agency on earth is without faults, but we are very certain that when these "socially-minded" persons take a few statistics and a few theories and a considerable amount of bias and mix them they will give no solution to any evil that exists regardless of the amount of money spent. We are equally certain that such a concoction will bring far greater evils than any that exist.

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#### AN INVESTIGATION OF SOCIAL INSURANCE

Attention is called to an editorial which appeared in the Journal of the American Medical Association under date of August 25, entitled "The Administration Studies Social Insurance."

Since all of our members do not receive the Journal, it is important that we call attention to it and mention a few of the points made.

The national administration is making a study of social insurance. A committee composed of some cabinet members and other officials has been created by the president, consisting of the following persons: "Miss Perkins, chairman, the remaining members including the Secretary of the Treasury, the Secretary of Agriculture, the Attorney General and the Federal Emergency Relief Administrator. This committee in turn has appointed a *technical board* to study the questions and to advise it in formulating legislation for presentation to the next Congress. Of this board the executive director is Edwin E. Witte, labor economist long connected with the industrial commission and the legislative reference service of the State of Wisconsin. The staff already includes Mrs. Barbara Nachtrieb Armstrong of the University of California, author of 'Insuring the Essentials,' Edgar Sydenstricker and Dr. Bryce Stewart of New

York. Miss Perkins states that the president is expected in the near future to name an advisory commission composed of representative citizens from all parts of the country to aid still further the development of the program for economic security."

Mr. Edgar Sydenstricker is a member of the staff of the Milbank Foundation. It is generally understood that the Milbank Foundation already has developed a plan for the fostering of state medicine in America.

Mr. John A. Kingsbury of the Milbank Foundation collaborated in the writing of a book, entitled "Red Medicine," in which he applauds the type of medicine that is practiced in Russia today.

One might, at first glance, form the impression that these people will approach the study of the subject with open minds. There is plenty of evidence, however, to indicate that, at least some of them, will approach the study with minds already fixed.

It is interesting to observe that there are no practitioners of medicine in this group.

The doctors of America, when medicine is involved, are not Republicans and Democrats. They are first doctors with some knowledge of what service to sick people is. They certainly have some knowledge of what the needs are. They have given some thought to the subject of *state medicine*. They are fairly familiar with what has happened in many countries of Europe where various systems of state medicine have been adopted. Doctors possess all the qualities of mind and soul necessary to a solution of this question in cooperation with the proper governmental agency.

Doctors are not anti-social. We do not believe it is boasting to say that doctors have been the greatest relief agencies on the job in America during this depression. They have not formed a block and made loud outcries as to the economic suffering they have endured. The fact that we make no loud outcry may be a fault instead of a virtue. Those who make the most publicity noise seem to get the ear of the public.

There are so many blocks and groups today with publicity agents cleverly playing on the emotions of people that one finds it difficult to keep in mind at times the fundamental principles of *justice* and *liberty*. After all these are worth preserving. Humanity was a long time securing them.

## RESOLUTIONS

### DR. H. T. FORTNER

The tragic drowning of Dr. H. T. Fortner at Harrington Lake, Ky., August 10, 1934, deprives Jellico, Tenn., and Campbell County of one of its most capable and best loved physicians, and the Campbell County Medical Society of one of its most active, popular and loyal members. He leaves a void that cannot easily be filled in the hearts of his associates, patients and friends.

Dr. Fortner was 34 years of age, having graduated from the University of Tennessee in the class of 1925.

He had, through recognized ability, unceasing devotion to duty and his wonderful personality, merited the large practice and the host of friends he enjoyed at the time of his death.

Now, therefore, be it resolved: That the Campbell County Medical Society deeply deplores the passing of Dr. Fortner; and, be it further resolved that we extend to his bereaved family our sincere sympathy and condolence; and, be it further resolved that a copy of this preamble and these resolutions be sent to the family of the deceased, a copy spread upon our record book, and a copy to the secretary of the State Medical Association for publication in the State Medical Association Journal.

J. W. PRESLEY,  
JAS. L. HEFFERNAN,  
F. A. MCCLINTOCK.

## DEATHS

H. T. Fortner, Jellico; University of Tennessee, Medical College, Memphis, 1925; aged 35; died August 10.

H. W. Sale, Covington; Tulane University of Louisiana School of Medicine, New Orleans, 1896; aged 61; died August 30.

J. B. Bond, Martin; University of Texas School of Medicine, Galveston, and University of Nashville, 1907; aged 60; died September 2.

## NEWS NOTES AND COMMENTS

The following letter has just been received:

"The President of our Association, Dr. C. C. Howard, has given me the very delightful duty of extending an invitation to the members of the Medical Societies of Tennessee, Virginia and West Virginia, to attend the sessions of the Annual Meeting of this Association, at Harlan, Ky., October 1-4.



"The House of Delegates will meet on the first and the Scientific Sessions will extend through the next three days.

"We shall be very happy to have your members attend our sessions and take part in the discussions.

"A. T. McCORMACK, M.D., *Secretary*,  
"Kentucky State Medical Assn."

On behalf of the Tennessee State Medical Association we express appreciation for this kind invitation and our best wishes for a successful meeting.

We hope a number of doctors from Tennessee will avail themselves of this opportunity to contact doctors of our sister state of Kentucky.

Dr. Walter D. Berry of East Longmeadow, Mass., has purchased the practice and equipment of Dr. Gilbert Eblen, Lenoir City. Dr. Eblen, after some postgraduate work at the Chicago Children's Memorial Hospital, is now associated with Dr. Oliver Hill, of Knoxville.

Dr. T. E. Rice has opened offices in Franklin, Tenn.

The Michigan State Medical Society announces the retirement of its Secretary, Dr. F. C. Warnshuis, effective September 15, 1934. Dr. Warnshuis is leaving Michigan to assume the duties of Secretary-Treasurer of the California Medical Association on October 1, 1934.

The International Assembly of the Interstate Postgraduate Medical Association of North America will be held in the Public Auditorium, Philadelphia, Pa., November 5-9, 1934. Many distinguished teachers and clinicians will appear on the program. A major list of the names of the contributors to the program, with other information, appears on page IX of this JOURNAL. All members of the Tennessee State Medical Association are cordially invited to attend. Registration fee of \$5.00 admits all members of the profession in good standing.

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## MEDICAL SOCIETIES

### *Davidson County:*

The Nashville Academy of Medicine opened its autumn session September 4 with a paper by Dr. Frazier Binns on "The Management of Diarrhoea of Infancy."

During the next few months a number of the papers will be repetitions of the lectures at the Nashville Postgraduate Medical Association. With such a program outlined, the members of the Academy are anticipating a profitable winter session.

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### *Gibson County:*

The "Annual Medical Society Barbecue" was held at Trenton on August 27. In addition to a full attendance of the members, a large number of visitors were present from Memphis, Dyersburg and Jackson. A scientific program followed the barbecue supper.

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### *Hamilton County:*

For the next four meetings programs are scheduled as follows:

September 20: "Some of the Results of Cancer Research and Treatment," by Dr. S. S. Marchbanks.

September 27: "Results in Repair of Relaxed Perineum at Time of Delivery," by Dr. James R. Reinberger, Memphis.

October 4: "Treatment of Sterility in Women," by Dr. J. C. Brooks. "Postpartum Care," by Dr. D. N. Williams.

October 11: "Attacks of So-called Acute Indigestion," by Dr. E. A. Gilbert. "Myocardiosis," by Dr. B. S. Wert.

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### *Hardin, Lawrence, Lewis, Perry and Wayne Counties:*

The Five County Medical Society met at Lawrenceburg on August 28. The following papers were read:

"Toxemia of Pregnancy," by Dr. L. C.

Harris, Lawrenceburg. Discussion opened by Dr. W. E. Boyce, Flatwoods.

"Perforating Gastric Ulcers," by Dr. T. G. Pollard, Nashville. Discussion opened by Dr. F. H. Norman, Waynesboro.

"Pelvic Diseases and Disabilities Due to Childbirth," by Dr. W. C. Dixon, Nashville. Discussion opened by Dr. O. H. Williams, Savannah.

"Agranulocytosis" (Case Report), by Dr. D. L. Woods, Waynesboro.

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### *Robertson County:*

On August 21, the meeting was held at Perry's Park. Dr. Murray Davis, of Nashville, read a paper on "Abdominal Injuries," and Dr. W. W. Wilkerson, of Nashville, spoke on "Eye Injuries."

The following members and visitors were present: Dr. John S. Hawkins, Dr. R. D. Moore, Dr. W. W. Porter, Dr. Wilkerson, Dr. W. Foster Fyke, Dr. John S. Freeman and Dr. W. B. Dye, of Springfield; Dr. W. S. Rude, of Ridgetop; Dr. J. S. Fentress, of Goodlettsville, and Dr. Walter Gossett, Adairville, Ky.

The following Nashville men were guests: Dr. Herman Spitz, Dr. J. C. Pennington, Dr. R. J. Warner, Dr. J. L. Bryan, Dr. O. N. Bryan, Dr. H. S. Shoulders, Dr. George Carpenter, Dr. Wallace Billington and Dr. L. W. Edwards.

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### *Washington County:*

The following program is scheduled for October 4:

"Backache: A Problem in Ex-Service Men," by Dr. H. B. Cupp. Discussion by Dr. Kyker.

"Diagnosis and Treatment of Endocrine Disorders in the Female," by Dr. C. H. Long. Discussion by Dr. Gibson.

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### *Wilson County:*

Dr. H. M. Wells will discuss "The Pathology of Pregnancy and Partuition" at the meeting to be held October 4.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Evipal Anesthesia. Chas. S. White and J. Lloyd Collins. *Southern Medicine and Surgery*. July, 1934.

Evipal is another barbiturate. A white powder readily soluble in water and when introduced into the circulation produces varying depths of narcosis, depending upon the amount administered. It is rapidly decomposed by the liver and does not involve the kidney. Its administration is followed by prompt, profound and brief anesthesia with few or no after-effects. One gram is dissolved in 10 cc. of distilled water. The best dose is 6 cc. of the solution for every 100 pounds of weight.

To obtain the best results a preliminary dose of morphine and atropine is required. About half the full dose is administered in ten to fifteen seconds and the remainder in the same time. If it is given slowly over three or four minutes there will be no anesthesia at all due to the rapid detoxication. The average duration of anesthesia was about 25 minutes in a series of cases. In some of these cases inhalation anesthesia was required to finish the operative procedure and in some others another injection of evipal was administered.

There were no lasting or alarming variations in the pulse, respiration, blood chemistry or blood pressure. The author believes that it is possible with more experience the duration of anesthesia may be prolonged either by increasing the dose, or by both increasing the amount and giving it in fractional doses.

### OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

Mucocele of the Maxillary Sinus. M. Takano. *Archives of Ophthalmology*. July, 1934.

The usual mucoceles of the nasal sinuses generally involve either the frontal or the ethmoid sinuses. The mucocele of the maxillary sinus destroys the wall of the orbit and disturbs the eye. The author presents a case. A man 59 years of age showed a swelling of the lower lid and pressure on the right eye. These had existed for a number of months. The eyeball was deviated upward. At operation it was found that the protrusion was caused by a mucocele of the maxillary sinus which had perforated the orbital wall. The mucocele contained cloudy fluid of a tenacious, yellowish-brown character. Histologic examination of the wall of the cyst showed a chronic inflammation. It is be-

lieved that the process started with an empyema confined to the antrum, with walls atrophied from pressure, and that then the cystic protrusion developed.

### PEDIATRICS

By JOHN M. LEE, M.D.  
Doctors Building, Nashville

Osteomyelitis Among Children. Samuel Amberg, M.D., and Ralph K. Ghormley, M.D., Rochester, Minn. *The Journal of Pediatrics*. August, 1934.

This condition is an infection of bone by the pyogenic organisms, staphylococci and streptococci, and is essentially a disease of childhood. The authors report a study of 394 patients under 15 years of age observed at the Mayo Clinic. More than 80 per cent of these children were between 2 and 13 years of age. Boys made up two-thirds of the total. There was a history of injury in less than a third of the cases. Exposure, sore throat, skin infection or infectious diseases frequently preceded.

The staphylococcus was most often the causative germ. The femur and tibia were the most frequent sites of the disease. In about 60 per cent of the cases the onset was acute, with severe, sudden pain, often occurring at night, followed within a few days by swelling, redness, tenderness, and rapid rise of temperature, often reaching 105 or more. Chills and sweats were frequent. In some cases the onset was that of an acute infectious disease with localizing symptoms appearing in a day or two. Others developed insidiously with slight general and local symptoms.

The disease may end in complete healing with no disability. Again there may be apparent healing with a flare-up at the original site or another location weeks, months or years later. About one per cent of the cases were of the fulminating type that were quickly fatal.

Practically all cases will require surgical treatment at one stage or another. The various details of surgical technic are discussed. Close cooperation of surgeon and pediatrician are urged. Case histories and citations from case histories are freely used to illustrate this article.

### SURGERY—GENERAL AND ABDOMINAL

By ROBIN F. MASON, M.D., F.A.C.S.  
735 Medical Arts Building, Memphis

A Lowered Mortality in Active Appendicitis and the Basis Therefor. Ernest E. Arnheim, M.D., F.A.C.S., and Harold Neuhoof, M.D., New York. *S.G.O. Volume LIX*, August, 1934, No. 2, Page 189.

A study of the literature shows that severe acute appendicitis mortality is as high as ever. An analysis of records of Mt. Sinai Hospital for three years ('28-'29-'30) shows a mortality of 8.2 per cent.



In 1930 the appendicitis problem was taken up seriously. Indication for operation, technique and general management were examined critically with the idea of improving the situation.

As a result the mortality for the second three year period, ('31-'32-'33) was 2.8 per cent. These statistics include only severe types of cases.

In first three year period, autopsies were done on 80 per cent of fatal cases. Suppuration caused death in all. In some there was diffuse peritonitis.

In the second three year series, there were five deaths. One died of lung abscess. The second died of exhaustion from abdominal wall infection, but at autopsy no peritoneal involvement was found. One already had peritonitis when operated and another had multiple liver abscesses.

In making a diagnosis the authors depend much on a clear-cut history and a definite point of tenderness. The point of tenderness is painstakingly sought after, because the incision to be made is influenced thereby.

Time of operation has been found very important.

All patients seen in first 24 hours are operated at once. Cases seen after this time are handled in an individual way; some operate at once and some after rest, etc.

All infants and babies are operated at once.

Appendiceal abscesses are not regarded as urgent but are rested and prepared sometimes for

days. Patients with diffuse peritonitis are rarely operated at once on admission but are given rest and glucose in saline in the vein. Intravenous drip is frequently continued for days after operation.

Avertin is the anesthetic of choice in practically all cases.

The authors deprecate speedy, sight-unseen operations through a small incision. They practice the reverse.

The incision should be adequate in length and located over the lesion regardless of anatomy. The authors prefer, however, the right rectus incision.

Suction is applied where fluid is present and all movements are made with gentleness under sight. The appendix is usually removed. Tube drainage is not used.

Iodoform gauze strips are used, being carefully packed into the infected cavity. Rubber dam is used to protect the gut from the gauze where feasible. Wound is closed loosely. Drains are not disturbed till loosened by discharge. Usually their removal begins about a week postoperative.

Opiates are given adequately. Cathartics never till patient is convalescent and then rarely.

When a patient doesn't do well, it is assumed that he is suffering from infection due to the operation and a close watch is kept or an encapsulated abscess, maybe subdiaphragmatic, the drainage of which usually is of vital importance.



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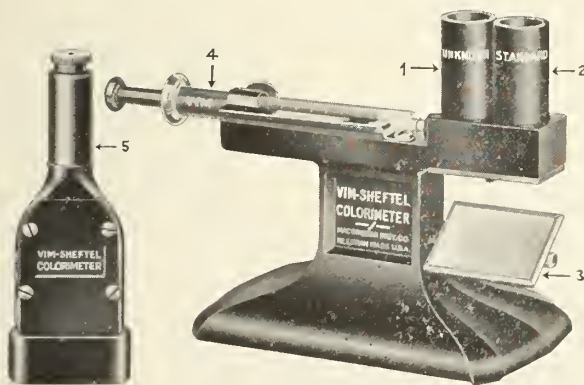
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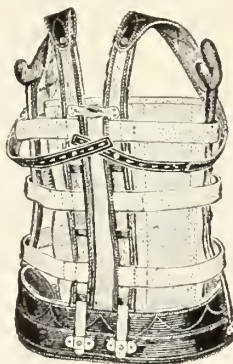
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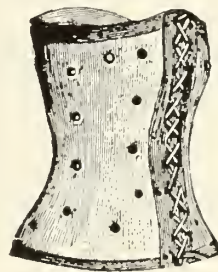
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### BONE TUMORS\*

WILLIS C. CAMPBELL, M.D., Memphis

THERE is no subject in which there has been more confusion in the past than tumors of the bone, and also no condition, as indicated by the high mortality, that is apparently more hopeless. For these reasons general apathy prevails among the profession, and it is rare that a case is recognized until there has been an extensive destructive process.

The Registry of Bone Sarcoma of the American College of Surgeons, organized by Dr. E. A. Codman, of Boston, has done much to clarify this very confusing subject, and has presented a classification of bone tumors and affection of bones which resemble bone tumors by which a diagnosis may be reached by those sufficiently interested to investigate. This has undoubtedly been the means of saving many limbs, which were unnecessarily sacrificed through error in diagnosis, and also possibly a number of lives. Regardless of the efforts of the registry, there still remains much to be accomplished.

The object of presenting this subject on this occasion is to stimulate more interest, and a more thorough investigation of all suspicious lesions of bone, so that it may be possible to accomplish results somewhat analogous to those which have been attained through propaganda regarding cancer. Undoubtedly many malignant conditions have been prevented by eradication of lesions in

which such conditions originate as scar of the cervix, moles, etc., and also by early recognition. On account of the high degree of malignancy in certain bone tumors it may not be possible to acquire the same degree of success as in carcinoma, but it is conceivable that much improvement is probable in comparison to existing conditions. As in cancer, there are many lesions of bone in which sarcoma is more prone to develop, and by eradication or constant observation it is obvious that material benefit may be attained.

This discussion is based upon the analysis of 250 cases of bone tumors from private records distributed over a period of twenty-four years. A review of the histories, roentgenograms, and, when possible, the pathology of these cases has demonstrated many errors in diagnosis, especially in those prior to the organization of the Registry of Bone Sarcoma. Before this time the knowledge of the subject, even among experts, was surely in a most chaotic condition, due to the fact that these tumors were designated by the pathologists according to their own individual perception of the portion of tissue from the tumor examined. Also there are so many varied elements as different types of cells and tissues, that the same tumor was often defined by entirely different names. Since the establishment of the registry, and more simple classification, it has been possible for the average physician to approach the subject with a

\*Read before the Tennessee State Medical Association, Chattanooga, April 10, 11, 12, 1934.





Fig. 1. Osteochondroma of the left femur, anteroposterior view.

much better understanding. However, as the registry definitely states, the problem of differentiation and diagnosis is far from solved, and further investigation will in all probability modify our present conception. The interpretation of the manifestations of tumor tissue by the microscope is still most difficult, so that opinions often vary with the most expert pathologists. From a practical standpoint, however, this difference is not so material as to the existence of malignancy, but as to the type of tumor under investigation. The average pathologist, however, has little conception of the subject, unless he has given much study and investigation to bone pathology. The diagnosis by the laboratory can only be regarded as important evidence, which is by no means conclusive. This must be made by the clinical history, the roentgenogram, and the microscopical examination.

In this discussion the same classification of bone tumors is employed as published by the author in a textbook on orthopedic surgery in 1930.

Primary tumors of bone must originate from cells normally residing in bone, of which, broadly speaking, there are two varieties. First, those whose function is solely the formation of bone of the skeleton, and which are termed osteogenic. Secondly, those which reside in bone, but whose function is not concerned in any way with the formation of bone; for example, endothelium of the blood vessels, bone marrow cells, etc. In addition to the primary tumors, bone may be invaded by metastasis from malignant lesions elsewhere in the body; therefore, all bone tumors may be divided into three classes: (1) osteogenic, (2) non-osteogenic, (3) metastatic.

Only the more common forms of tumors which present more or less definite clinical



Fig. 2. Same as Fig. 1, lateral view.

types will be discussed, as illustrated by the following:

TABLE I	
Osteogenic	Relatively benign { Osteochondroma Chondroma Osteoma Giant cell
	Malignant { Osteoblastic Osteolytic (under 30) Osteolytic (over 30) Evolutionary (primary and secondary)
Non-osteogenic	{ Endothelial myeloma (Ewing) Extraperiosteal Myeloma
Metastatic	{ Carcinoma Lymphadenoma Hypernephroma Thyroid (etc.)

“Osteogenic Sarcomas” are those which are derived from and of the elements that may be found in the formation of bone, which may vary all the way from the em-



Fig. 3. X-ray of specimen of tibia after amputation, showing osteogenic sarcoma, anteroposterior view.



Fig. 4. Same as Fig. 3, lateral view.

bryological undifferentiated myxomatous tissue to solid bone. Thus the tumor may be composed of myxomatous tissue, fibroblasts, cartilage, osteoid tissue or true bone, and various other elements observed in the evolution of bone. In consistency, the tumor may vary all the way from a soft fluctuating mass to hard bone. All of these elements are often in an osteogenic tumor, any one of which may predominate. In the past, pathologists have designated these tumors according to the prevailing tissue observed in the specimen examined. There are over 100 combinations described in various osteogenic sarcomas, and such designations have led to great confusion. As the Registry of Bone Sarcoma clearly states, all tumors derived from osteogenic cells or tissue should be defined as osteogenic sarcoma, after which special characteristics may be described, and is of some clinical significance as the degree of malignancy.





Fig. 5. Osteogenic sarcoma of femur, anteroposterior view.

All bone tumors may be regarded as potentially malignant; for this reason I have employed the term, "relatively benign." Osteochondromas, chondromas, and osteomas are tumors composed of adult tissue observed in all normal individuals, do not recur if completely removed, and do not metastasize; but, according to Ernfreid, five per cent are the seat of malignant changes. Whether this is a malignant degeneration of the tumor itself or a primary tumor arising from malignant cells dormant but incorporated within the tumor is of scientific but not of practical importance.

Giant cell tumors were formerly regarded as malignant, and many limbs and lives have been unnecessarily sacrificed. We now know that this tumor is practically always benign, and, if efficiently removed or treated by X-ray in some instances, a cure may be expected. However, there are instances

where tumors having almost identical clinical course, location, and X-ray findings as giant cell tumor are malignant and must be so regarded. As in osteochondroma above mentioned, whether these are malignant tumors growing in giant cell tumors or degeneration thereof is of less practical than scientific value.

Giant cell tumors are located in a very high percentage on the distal side of the epiphysis, have a characteristic cystic appearance, and in the early stage are surrounded by a thin shell of bone with thin partitions of bone throughout the tumor giving the well-known soap-bubble effect. Complete removal or treatment by X-ray therapy is effective in a high percentage. Amputation should not be considered unless malignant changes can be definitely demonstrated, and only then after consultation with clinical and pathological experts.

I fully realize that many eminent authori-



Fig. 6. Same as Fig. 5, lateral view.

ties state that giant cell tumors are always benign, but there are too many instances of tumors so closely resembling this tumor that do prove malignant to take such an arbitrary stand.

Osteogenic sarcomas are all malignant and must be so treated, although there are certain types that are less malignant than others. They occur most frequently in the extremity of long bones on the epiphysial side. There are four of the more common clinical types above mentioned in the outline, though differentiation is by no means arbitrary.

Osteogenic osteoblastic sarcomas are those in which there is a predominance of well-formed bone. Sclerosed osteogenic sarcoma is another term often employed. Some of the other elements in the genesis may also be found on examination of the gross specimen of the entire tumor. A fairly large percentage, especially in adults, have been reported as cured by amputation.

In our cases the results have always been fatal.

Osteogenic osteolytic sarcoma, under 25 years, as the name implies, is the antithesis to the bone-forming type above mentioned. There is a rapid destruction of bone or lysis due to the rapidly growing embryonic cells, osteoid tissue, and blood vessels. Metastasis occurs early and the patient is practically never observed at the onset. The mortality is very high. All in our series have terminated fatally. Osteogenic osteolytic sarcomas in adults are of much slower growth, and apparently begin in the medulla, causing gradual destructive changes. Amputation will cure many cases; in our series fifty per cent. Most of our cases have fibrosarcomas which are not as high in degree of malignancy as the osteolytic type in the young or the other types above mentioned.

Evolutionary osteogenic sarcoma is a term which I have employed with some temerity, but, as these tumors vary in their composition of the elements above mentioned, I know of no name that will better classify. Geschickter and Copeland in their classic treatise on bone tumors classify these as chondro-myxo-sarcoma, but in a majority of our cases neither cartilage nor myxomatous tissue predominated. In a few, adult cartilage predominated and these are not so malignant, and have been called by Phemister chondrosarcomas, but such terms as chondro-myxo-sarcoma or chondrosarcoma are not warranted except as descriptive of a type of osteogenic sarcoma. In a number of our cases the type was fibrosarcoma, while in several a mixture of myxomatous tissue, cartilage, and bone.

Evolutionary osteogenic sarcomas may be divided into primary and secondary. The primary are of the most malignant types of bone sarcoma, the mortality being very high. The secondary are those that occur in chronic bone lesions, as osteochondromata above mentioned, low-grade osteitis, osteitis deformans (Pagets). The malignancy is not so high and several cases discussed below are living after a number of years. Also there are several in the primary tumors that have been apparently cured by operation.

The term "evolutionary" is used to define



Fig. 7. Metastatic tumor (hypernephroma of femur) anteroposterior view.





Fig. 8. Same as Fig. 7, lateral view.

this more or less mixed class, as no designation that I know of is more descriptive. It is not my desire to add a new term and confusion to the already burdened literature.

The nonosteogenic, as above described, are primary tumors arising in bone, from tissue normally residing in bone but in no way osteogenetic or bone-forming. By far the most common is the endothelial myeloma (Ewing's tumor). The term is most comprising, as there are other certain rare tumors of bone called endothelioma which do not resemble this tumor, and there is a well-known tumor of myeloma described below.

Ewing's differentiation of this tumor in 1921 has been accepted by all experts in this country as a clinical entity. In the past this tumor was usually described as "round cell sarcoma," a term now obsolete and unwarranted. The occurrence is by far more fre-

quent than is generally recognized. The clinical symptoms and microscopical and X-ray findings closely resemble inflammatory conditions, but there are certain definite differential factors by which the diagnosis can usually be made. The response to X-ray and radium is so rapid that differentiation can usually be made by such measures alone. In the past all our cases died, but during the past eight years, since we have been able to recognize this type, there are several which are living, following amputation and X-ray treatment, amputation with Coley toxins, and X-ray treatment and Coley toxins alone. In this tumor the symptoms and clinical course are suggestive of a possible infectious nature, therefore, if in the future this should be proven, the rationale of protein reaction as obtained from Coley toxins would be possible.

Extraperiosteal sarcomas are tumors apparently arising from the fibrous layer of the periosteum and surrounding the bone. A majority are fibrosarcomas and of the same degree of malignancy as sarcoma of the soft tissues. They are less malignant than the majority of bone tumors except in the small cut cell type. Amputation may cure in a fairly large percentage.

Myeloma is a tumor of the marrow cells, usually the plasma cell type. It rarely occurs locally but is usually multiple, being disseminated throughout the skeleton. It does respond to X-ray but no cures are effected thereby. The tumor is easily recognized by the roentgenogram, tissue examination, and Bence-Jones protein in the urine.

Angioma is a malignant tumor composed of blood vessels, and is so rare as to deserve only brief mention in this discussion. Unfortunately the same term is employed to excessively vascularized giant cell tumor.

The metastatic tumors to bone are many, the most common being mentioned in the outline. They are from carcinoma of the breast and prostate gland and are usually multiple. Hypernephroma, a tumor of kidney tissue, has some characteristics that may be suggestive in the roentgenogram as complete dissolution of osseous structure,

but the diagnosis can be made only from biopsy. Thyroid tumors and lymphadenoma also are made in the same manner as are other tumors which rarely metastasize to bone.

In our series of local malignant bone tumors, not including metastatic tumors, there are 250 cases, of these there are 19 cases living and in good health, of sufficient length of time to warrant discussion. Seven

of these are excluded as I am not absolutely certain as to diagnosis, as there are certain factors which are questionable, requiring further investigation before reporting. One of the cases has been diagnosed by three eminent pathologists of the Registry of Bone Sarcoma as a Ewing's tumor. In twelve I am reasonably certain as to the diagnosis; therefore, these will be analyzed in the following tabulation.

OSTEOGENIC SARCOMA  
PATIENTS LIVING, APRIL, 1934

EVOLUTIONARY

	AGE	SEX	DATE ADMISSION	DURATION BEFORE TREATMENT	LOCATION	TREATMENT	DURATION AFTER TREATMENT	ALIVE SINCE ONSET
1	38	M	8-11-19	1 yr. 3 mos.	Left fibula upper half	Amputation	14 yrs. 8 mos.	15 yrs. 11 mos.
2	51	M	11-1-26	2 yrs. 6 mos.	Left fibula lower third	Amputation	7 yrs. 5 mos.	9 yrs. 11 mos.
3	28	F	12-8-27	1 yr.	Right femur lower third	Amputation X-ray	6 yrs. 5 mos.	7 yrs. 5 mos.
4	19	M	1-3-29	8 mos.	Right tibia middle third	Amputation	5 yrs. 3 mos.	5 yrs. 11 mos.
5	38	F	9-14-30	5 mos.	Left mandible	Resection Bone graft X-ray	3 yrs. 7 mos.	4 yrs.
6	30	M	5-21-31	1 yr.	Left femur lower third	Amputation X-ray, Coley Toxins	2 yrs. 11 mos.	3 yrs. 11 mos.
7	16	M	12-5-31	3 mos.	Left tibia upper third	Amputation X-ray, Coley Toxins	2 yrs. 4 mos.	2 yrs. 7 mos.

OSTEOLYTIC

8	22	M	2-1-23	5 mos.	Left tibia lower third	Amputation	11 yrs. 2 mos.	11 yrs. 7 mos.
9	39	F	5-15-23	10 mos.	Left tibia upper half	Amputation	10 yrs. 11 mos.	11 yrs. 9 mos.

EWING'S

10	47	M	2-17-27	1 yr.	Right tibia lower half	Amputation X-ray, Coley Toxins	7 yrs. 2 mos.	8 yrs. 2 mos.
11	21	M	8-3-30	4 mos.	Right tibia middle third	Exeision X-ray, Coley Toxins	3 yrs. 8 mos.	4 yrs.
12	12	F	5-20-31	2 yrs.	Left tibia lower half	Amputation X-ray, Coley Toxins	2 yrs. 11 mos.	4 yrs. 11 mos.

EXTRAPERIOSTEAL

13	34	F	5-27-32	30 yrs.	Left Os calcis	Amputation X-ray, Coley Toxins	1 yr. 11 mos.	31 yrs. 11 mos.
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## DISCUSSION

DR. R. W. BILLINGTON (Nashville): Dr. Campbell has given us a very interesting and very concise picture of this subject. Of course, it is such a big subject that one doesn't pretend to cover the field to any great extent. It is one in which it is difficult to pick out the most important points to discuss. Not having had the chance of seeing Dr. Campbell's paper beforehand, I took the liberty of picking out a few points which I thought of particular interest, most of which he has already mentioned, one or two of which he has not touched upon.

His classification differs slightly from that of the Registry of Bone Sarcoma and that of Geschickter and Copeland in their recent textbook. Geschickter states in his discussion of classification that the failure of the pathologist to appreciate relationship between normal bone development and tumor formation has been the cause of a great deal of the difficulty in this subject. You know we have had many classifications, as we have in arthritis and other conditions, in the case of bone tumors. There are various ideas as to causation and the different types of predominating cells, and now the latest question is the type of tissue from which the tumor develops. So the question of bone development is a thing to keep in mind. We must appreciate just what is meant by the various terms and names applied to these different tumors.

He says this difficulty has been due to the assumption that the permanent bony skeleton is achieved in early adult life, which is not true. It is said that in all ages there are places where transitional forms between the different tissues persist, each transition representing a possibility of tumor formation. That, of course, is all based on this idea of the origin, the tissues from which these tumors originate.

The classification as to names is somewhat confusing, perhaps, unless you study it from this angle and get familiar with these different terms as related to the different tissues, but the thing, of course, that we are particularly interested in is to know whether a given tumor is benign or malignant; if it is malignant, whether it is sufficiently radiosensitive to be curable without the use of surgery, or, if operation is required, what plan is best, and what is to be expected in the way of treatment either by radiation or operation or the two plans combined.

Bloodgood has given us a plan or an outline of rules of procedure, which, I think, are probably as good as could be expressed briefly, and they are these:

1. Do not operate in an emergency except where there is an acute infection which demands immediate drainage. In other words, don't be in too big a hurry to operate on your bone tumor.

2. Do not perform operation or biopsy until the history and physical examination and other laboratory findings are carefully studied. If X-ray has

indicated probable malignancy there is no objection to giving radiotherapy while waiting.

3. If doubt still persists, clinical and laboratory data, including the X-rays, should be presented to other experienced consultants, surgeons and pathologists, before doing a biopsy, continuing your deep therapy.

Then he says: "Do not discuss amputation and other mutilating operations with your patient until the case has been thoroughly studied and you are sure that such an operation is necessary, as this may cause the patient to leave you before the study is complete." That very frequently happens. We have all had the experience of having a patient suspect something of that sort and ask us about it, of course; and you can dodge the subject of operation, do not discuss that with them, put it aside, tell them the case must be worked out thoroughly and a decision made as to just what is necessary before you can discuss ways and means of operation.

Biopsy may be necessary to settle a diagnosis. Thoroughly study your specimens. One or more capable bone pathologists should be consulted, preferably two or more. An interval of a week or two or three weeks between the biopsy and the operation does not involve added risk as we formerly believed. It is a question as to whether there is any particular risk or danger if the biopsy is done carefully without mutilation.

If deep X-ray or radium therapy is chosen for primary treatment for bone sarcoma, it should be given up if improvement is not prompt, say within two or three weeks. If you do not receive definite improvement from radiotherapy within two or three weeks, it isn't truly radiosensitive or sufficiently so to justify continued treatment by that method. If the tumor is inoperable because of size or situation, the radiotherapy—X-ray and radium—is the only thing, of course, left, and that should be pushed to the limit. As a rule, Bloodgood states that irradiation cannot compete with operation. If a case is operable, no risk should be taken by delay, that is, in endangering the development of an inoperable condition. Don't let it become inoperable. No evidence exists, he thinks, of irradiation increasing the danger of metastasis nor that it prevents metastasis.

In benign giant cell tumors, curettement or resection is preferable to amputation.

DR. R. C. ROBERTSON (Chattanooga): Dr. Campbell has presented this broad subject so completely that it is difficult to select one of more points from his demonstration for thorough discussion. It seems to me that the chief purpose of presenting this subject at this meeting of this type should be primarily to assist the man in general practice and the general surgeon to recognize and treat these relatively uncommon conditions early.

In my observation, the most frequent error is that of diagnosing early sarcoma as osteomyelitis, and vice versa. You have seen demonstrated by the slides such cases which Dr. Campbell frankly

states were clinically diagnosed as osteomyelitis and which only by biopsy were proven to be malignant. Bone sarcoma must be considered in all cases of osteomyelitis which do not behave in a typical manner with severe pain, marked pyrexia, pus formation, and the usual sequelae. In such cases, early biopsy should be performed, and the tissues examined by a pathologist experienced in bone pathology. Stained specimens are certainly preferable to frozen sections, and the slight delay is more than offset by the increased certainty of diagnosis.

The second point which should be stressed is, that, following incomplete removal of an osteochondroma—and this includes the vast majority of the so-called osteomas—there is a recurrence with malignant changes in quite an appreciable percentage of cases. Complete excision should be performed in all such cases, and the patient observed for at least one year following excision, because an occasional one does become malignant, and if seen early the prognosis is certainly quite different than if it is seen late.

So much attention has been paid to early diagnosis of malignancy elsewhere that it seems rather absurd that early diagnosis in bone tumors is not the usual rather than the unusual thing, as it now is. Why, it is rather difficult to explain; probably because the condition is not considered.

DR. J. A. McINTOSH (Memphis): I arise to say a word or two about Coley's serum about which Dr. Campbell spoke. It isn't a serum; it is a vaccine. Dr. Campbell used that word interchangeably. I was especially pleased with the attitude and stand he takes toward this biological product.

I had an experience with a little boy about two years ago. I have never told Dr. Campbell about this experience, but he seems eager to have others try this product in the treatment of particularly the Ewing cell type of sarcoma. The tissue was sent to us at St. Joseph's Hospital for diagnosis, from a little place in Arkansas. We were unable to tell from the biopsy submitted whether it was malignant or not, but we felt that we did not want to do any injustice to the patient, and we asked the doctor to give us another trial, to give us another piece taken somewhere else from the lesion. Instead of sending the second biopsy he sent the boy, and we found at the base of the big toe an ulcer. From that we made a biopsy and it was definitely malignant. In addition to that, the child had in his groin several large metastatic

glands. These were dissected. The diagnosis of Ewing cell sarcoma was made, the lesion was X-rayed, and then we sent the child home with the package of Coley's toxin, which is made, as you know, from the bacillus prodigiosus in erysipelas, which is a form of the streptococcus.

This was carried home by the child to the local physician, who faithfully carried out the régime as recommended by Dr. Coley, and the child returned just three weeks ago, having had three different series of treatments, more than 150 injections (by the way, that product has a kick, a very definite reaction follows it), and the child had no evidence of the trouble; the glands on both sides had diminished in size. He left after X-ray with both of them enlarged, but after two years with this combined treatment that Dr. Campbell mentions, of X-ray and also the use of the toxin, the child is symptomless so far as that tumor is concerned.

DR. WILLIS C. CAMPBELL (closing): I want to show the end results. We have over twenty cases of bone sarcoma that are today living and well. Of this number, thirteen are unquestionably diagnosed correctly. The others I have excluded. I will analyze in the paper a table showing these cases. Of these thirteen, there are five cases that are extremely malignant types of tumors that have been living anywhere from three to twelve or thirteen years. So I believe that the condition is not as hopeless as it might seem.

There is still much confusion that exists in the examination of tissues by the pathologist. It is very seldom that we can have agreement on any one type of tumor, but there is one thing they do usually agree on, whether or not the tumor is malignant.

We have many cases of injuries, a point that I didn't mention, but want to bring out. In tumors of the bone, trauma is associated in at least fifty per cent of the cases, and we see many cases in which there is injury of the bone, and in which pain persists soon thereafter. That type of condition should be repeatedly X-rayed, and, when we see the slightest evidence of tumor, a biopsy should be made. If we follow this, I feel that we can improve materially our results, and that was the object of bringing before you this discussion, and not going into the details of the various tumors, which I think would not be appropriate on an occasion of this kind.



## INTRAVENOUS DEXTROSE THERAPY

GEORGE D. BOONE, M.D., Paris

THE PURPOSE of this paper is to present a brief resume of the present status of dextrose therapy. Its content is based on a review of the current literature. Nothing original is offered. It is believed that in many cases the giving of dextrose in the vein is a life-saving measure. It is also evident that the rank and file practitioner is annually permitting many a patient to die because of failure to administer dextrose solution. Its use is no longer new-fangled. A simplified technique with commercially prepared solutions renders it available in any hospital or home and office practice.

The physician using dextrose in the vein should have a fair conception of the chemical and physiological changes involved in the conversion of vegetable dextrose into animal energy and tissue. Thus fortified, he may readily master the technique of safe administration. The physiological basis for dextrose therapy depends upon the fact that it is a food which is readily oxidized by the tissues without further digestion. In the process of oxidation, it destroys ketogenic bodies, thus combating acidosis. Likewise, many exogenous and endogenous toxins are neutralized by its partial or complete oxidation.

### INDICATIONS

Generally speaking, there are four broad indications for dextrose phlebotoclysis: (1) Hypohydration, (2) hypochloridation, (3) acidosis, (4) poisoning.

Hypohydration includes any case in which other methods of water intake are inadequate. Any seriously ill patient should receive sufficient intake of fluids to assure a twenty-four-hour output of at least one liter of urine. Whenever it becomes impossible to maintain this amount by oral or rectal routes, hypohydration occurs and dextrose phlebotoclysis must be quickly resorted to.

Hypochloridation, or salt starvation, fre-

quently occurs in intestinal obstruction, extensive burns, profuse diarrhea, persistent vomiting, and extreme sweating. In such cases, dextrose in saline solution should be given, remembering that dextrose in distilled water alone increases the salt deficiency.

In any case of illness resulting in insufficient sodium bicarbonate in the blood, with consequent ketosis in which the giving of sodium bicarbonate fails to obtain lasting effect, dextrose is to be immediately administered. Sufficient quantity is given to maintain an amphoteric reaction in the urine. Similarly, starvation acidosis is avoided. It is under this heading that dextrose is used in cases of malnutrition where nutrition by other routes is inadequate.

Cases of diffusible poisons, such as mercuric chloride poisoning, cinchophen, chloroform, and phosphorus poisoning, are greatly benefited by dextrose. If the poison is unabsorbed, an isotonic solution of dextrose should be given. If the poison is in the circulation, a hypertonic solution is to be used.

Another group of cases responding to dextrose therapy are those cases which react favorably to osmotherapy, *i. e.*, conditions which are benefited by osmotic changes in the blood and tissue fluids. Pulmonary edema, the pneumonias, and cases of increased intraspinal pressure come under this group. Although numerous writers have previously recommended the use of hypertonic dextrose solutions for the lowering of intracranial pressure wherever indicated, Jackson has recently shown that, as measured directly by the spinal manometer, in many cases the pressure is actually increased. He warns that the use of dextrose leads to a false sense of security in the treatment of intracranial injuries. Apparently, it remains for clinical experience to prove whether dextrose is contraindicated in acute intracranial injuries.

### CONTRAINDICATIONS

A special committee, appointed by the Therapeutic Research Committee of the Council on Pharmacy and Chemistry of the American Medical Association, in discussing the subject of intravenous medication, concluded that intravenous injection of dextrose is rarely justified, if the desired effects can be obtained by the more usual modes of administration. They concluded also that its risks frequently outweigh its benefits in greatly weakened patients, the aged, and at times patients with hypertension, arteriosclerosis, or heart diseases.

Stuber and Long noted phenomena following the intravenous injection of 20 cc. of 20 per cent dextrose solution and observed that they were characterized as profound physical-chemical changes in the blood, which could favor the formation of thrombi and emboli. Clinical experience, however, gives little indication of such hazards.

Saline solutions should not be used as a vehicle for dextrose in such conditions as deficient kidney elimination, chronic nephritis, edema of the lungs, cardiovascular disease with salt retention, toxemias with insufficient elimination, and anasarca.

Occasionally the injection of too much water results in a syndrome characterized as "water sickness," the early symptoms of which are vomiting, slight puffiness of the face, especially of the lower eyelids, and a tendency for the eyes to water.

### PRACTICAL CONSIDERATIONS

Dextrose is available in commercially prepared ampoules in 50 per cent concentration, or containing Ringer's solution five times concentrated. The Council on Pharmacy and Chemistry of the American Medical Association has also accepted a prepared dextrose in 5, 10, or 25 per cent solution in either distilled water, physiological saline, Ringer's solution, or Hartman's solution in 1000 cc. vacuum containers ready for immediate use. These preparations are inexpensive, and their use makes intravenous dextrose therapy a relatively simple and readily available procedure. Indeed, it seems that such flasks prepared for imme-

diately use preclude the necessity of the more complicated and detailed preparation of one's own solutions.

Dextrose is administered in various concentrations. Frequently, in emergency and where fluids are not particularly desired, the 50 per cent concentrated solution as prepared in the ampoule is given without further dilution. Williams and McNealy have shown experimentally that laking of red blood cells occurred when concentrations below 3½ per cent were used, while crenation appeared at 7 per cent. They conclude that a 5 per cent solution is the optimum concentration. Dultman states that since a 4.15 per cent dextrose solution is as isotonic to the tissues and blood as a 0.9 per cent sodium chloride solution a 5 per cent solution is satisfactory. There are very definite indications as to which solvent is to be used, as is pointed out elsewhere in this discussion. Because hypertonicity favors a more rapid interchange between the tissues and the blood stream, Titus and Dodds desire a 25 per cent solution. Matas, Hendon, and Horsley use a 5 per cent solution in their method of continuous infusion.

If one prepares his own solutions, it is imperative that a rigid technique be observed. When tablets of sodium chloride or Ringer's solution are used, a sufficient amount is thoroughly dissolved in 50 cc. of distilled water, and this solution is filtered through three thicknesses of fine white silk cloth, using glass funnels only. This solution is added to the required amount of distilled water, which is boiled slowly for 15 minutes. The solution should not be used when over 24 hours old. The dextrose is added at the time of injection. Only freshly distilled water should be used. Doubly distilled water is preferable. Pyrogens or fever-producing substances are formed on standing.

Dextrose solution may be given intermittently or by the continuous infusion method. The latter method used over a period of days has important advantages where indicated. One of these is the continuous flow of dextrose without undue strain on the organs of assimilation. Another is the amount of carbohydrate that can be admin-



istered. Hendon gave as much as 600 gms. in 18 hours, and as much as 600 gms. daily for five successive days. A needle may be used in the vein for 10 or 12 hours. For longer periods a special infusion cannula must be resorted to.

The rate of flow of the solution depends upon the dose desired and upon the condition under treatment. The average initial dose, 25 gms., requires one and three-quarters hours. The ideal rate of flow is 4 cc. per minute. In active treatment of shock, the rate of flow may be 7.5 to 15 cc. per minute. In the continuous infusion method, the rate of flow is 3 to 4 cc. per minute. Too rapid injection may result in a syndrome, for which the term "speed shock" has been suggested. This consists of a fall in blood pressure, dyspnea, respiratory irregularity, salivation, vomiting, diarrhea, muscular weakness, muscular spasm, and impaired coagulability of the blood. Death may result.

The temperature of the solution delivered to the vein should be 100 to 110 degrees Fahrenheit. A simple expedient to maintain the correct temperature is to allow the rubber tubing to coil in a basin of water of the proper temperature during the period of injection. An infusion thermometer should be inserted into the tubing immediately proximal to the needle. Titus and Dodd have designed an apparatus for regulating the rate of flow and the temperature of intravenous injections.

Figure 1 illustrates the type of apparatus most frequently utilized where one uses his own solutions. All glassware is pyrex, and rubber tubing is specially selected to insure its freedom from the liberation of toxic substances. A calibrated pipette affixed to the pyrex flask and connected by means of a glass "Y" connection makes it possible to accurately determine the rate of flow of the solution. The needle should be of stainless steel, No. 20 gauge,  $1\frac{1}{2}$  inches long, and with extremely sharp point with a short head. The entire apparatus, after being scrupulously cleaned and dried, is sterilized in an autoclave at 15 pounds pressure for 20 minutes, immediately before use. Less desirable, but frequently practiced, is the



method of boiling the apparatus in a sterilizer for 30 to 45 minutes.

Whenever administering dextrose intravenously, the coincident use of insulin must be considered. Gage and his associates state that experimental evidence indicates that clinically prepared dextrose alone should be used cautiously, and that it should be combined with insulin in order to minimize the inhibitory effect it may have on the intestines. Fisher and Snell believe that in shock, nondiabetic acidosis, toxemic vomiting of pregnancy, and eclampsia there is a tremendous advantage in using insulin with dextrose instead of alone, because insulin oxidizes the dextrose and gives ready energy. However, in a more recent article, T. L. Althausen writes that clinical reports are beginning to appear in which insulin therapy, in diseases of the liver, is consid-

ered overrated and harmful. When insulin is used, one unit of insulin is given subcutaneously for every 3 gms. of dextrose. With the present state of knowledge, the choice of the use of insulin seems to be a matter of experience and proper selection of cases. Fantus states that the appearance of sugar in the urine in the course of dextrose phleboclysis means either decreasing the dextrose or the administration of insulin, excepting in cases of poisoning, in which the diuretic action of the sugar is welcome.

Five per cent solution of dextrose may be given by hypodermoclysis, in the muscle, or under the fascia. Patients occasionally complain of local pain, which is not severe. Fairly rapid absorption is the general rule.

A study of the cases in our own practice over a four-year period from March, 1930, to March, 1934, indicates that we have limited the use of dextrose to critically ill patients and that usually it has been used as a last resort. In this series, there were no severe reactions, and in no case were we able to detect adverse effects. In most instances, a 5 per cent solution of dextrose in physiological saline was used. More recently, distilled water has replaced the saline solution. In retrospect, we believe that in many instances dextrose was the determining factor in avoiding an otherwise disastrous outcome. It is our opinion that we have been far too conservative in the quantity used, and that we have probably failed to use it in many cases where it would have been beneficial.

A summary such as this of the current literature on intravenous dextrose therapy yields the following impressions:

1. The therapeutic use of dextrose intravenously has rapidly progressed from utilization as an emergency measure in severe cases to a routine procedure in many types of major surgery and medical cases.

2. There is a broad latitude of choice as to concentration and as to the vehicle. A concentration of 5 per cent seems to be the most satisfactory except in certain conditions requiring either a hypotonic or hypertonic solution. Distilled water or physio-

logical saline is the most commonly used diluent.

3. Extreme care is to be exercised in the preparation of solutions and apparatus. Unfavorable reactions are preventable. A commercially prepared solution of dextrose in varying concentrations ready for immediate use makes dextrose therapy a relatively simple and readily available procedure.

4. An analysis of our experience with its use urges us to consider it in a greater variety of cases and to administer it in larger quantities.

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## THE RELATION OF THE PRACTICING PHYSICIAN TO THE CONTROL OF TUBERCULOSIS\*

A. E. KELLER,\*\* M.D., Nashville

**I**N PRESENTING a discussion of this subject, an attempt has been made to point out certain basic facts concerning the problem of tuberculosis and to emphasize the opportunities which practitioners of medicine have to assist in the control of this disease.

It has been over half a century since the tubercle bacillus was demonstrated as the etiological agent of tuberculosis. During the past thirty years, certain movements regarding tuberculosis control have occurred. They have been of marked educational value, and as a result renewed interest in this disease on the part of the public has been aroused. Investigations have been carried on from both the clinical and epidemiological points of view, so that we can now make certain observations regarding tuberculosis with a fair degree of accuracy. Hospital facilities have been increased greatly. State health departments have been stimulated to make special studies of tuberculosis. As a result of these investigations, administrative machinery has been set up in certain states whereby the state departments of health with the aid of the local health departments are attempting to carry on systematic control of this disease.

During the past three decades, the mortality rate from tuberculosis has declined greatly. In the year 1900, the mortality rate from all forms of tuberculosis in the United States Registration Area was 195.0 per 100,000 population. In 1929, the same rate was 76.0 per 100,000 population. During this period, there has been a decline of more than 60 per cent in the mortality from tuberculosis. As a result of the efforts put forth and the measures instituted by vari-

ous groups, a delay in the occurrence of death has been made possible, and a large number of people have had active tuberculous processes arrested. In spite of this remarkable reduction in mortality, there still occurs in the United States a large number of deaths annually. It has been estimated that there are approximately one million persons in this country at all times with active tuberculosis. Opie has pointed out that the diminishing mortality from tuberculosis has to some extent produced the impression that the control of the disease is assured. Inferences from such data will do much harm if they suggest a relaxation of effort. The widespread prevalence of tuberculous infection as revealed by all methods of examination, including observations made post mortem, demands consideration in any attempt to estimate the significance of the diminishing death rate from tuberculosis.

During this period, however, there has not been a parallel reduction in the morbidity resulting from tuberculosis. Available evidence is in favor of the point of view that there has not been a decrease in the number of infected persons.

It has been shown by workers in the United States and abroad that in various communities from 11 to 95 per cent of the school children are infected with the tubercle bacillus as evidenced by positive tuberculin reactions. In a large eastern city, for the period 1926-1929, a study of the tuberculosis infection rate was made in 4,000 school children by means of the intracutaneous tuberculin test. It was demonstrated that 37 per cent gave positive reactions at the age of five years. At ten years, 71 per cent gave positive reactions, 80 per cent at fifteen years, and 90 per cent at eighteen years. These results, taken from a representative large urban area, indicate that in the cities at least there has been no notable decrease in the

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\*\*From the Department of Preventive Medicine and Public Health, Vanderbilt University School of Medicine, Nashville, Tenn.



incidence of infection. Aronson, working in two rural counties in Tennessee and one in Mississippi, tested with tuberculin 1,175 white and 864 negro children between the ages of 5 and 19 years. He demonstrated that 50.9 per cent of the white and 60.4 per cent of the negro children gave positive reactions with 0.01 mg. of tuberculin intradermally. These observations indicate that the dissemination of tubercle bacilli is still sufficiently widespread to bring about infections in a large percentage of all children before they reach adult life.

There are two sources of infection with the tubercle bacillus, infected humans and infected cattle. The bovine tubercle bacillus produces in humans mainly the nonpulmonary forms of tuberculosis. The infant and child population groups are more likely to be attacked with the bovine tubercle bacillus through the injection of infected raw milk. In the United States the control of bovine tuberculosis has been carried on very successfully. This is evidenced by the marked decrease in morbidity and mortality from this type of infection. There has been a greater decline in the death rate from tuberculosis among infants and children than in the adult population. Drolet has shown that in New York City for the period 1898 to 1928 there has been a decrease of 66 per cent in the mortality rate from pulmonary tuberculosis in the whole population, while the decrease in the rate from the nonpulmonary forms, confined mostly to children, has been 78 per cent. Orthopedic clinics in the large cities report decreases ranging from 20 to 50 per cent in the incidence of bone tuberculosis. Landis also has commented recently on the marked decrease in the number of children in dispensaries and hospitals with cervical adenitis due to the bovine tubercle bacillus. These results have been brought about by tuberculin testing of cattle, with the exclusion of foci of infection from herds, and the pasteurization of milk.

While it would not be wise to relax our efforts in the control of bovine tuberculosis in humans, it is well to exert a greater effort against the more important human

source, if further advances in the control of tuberculosis are to be made. We know that the tubercle bacillus is an ubiquitous organism. We know also that the disease, tuberculosis, is a "family disease." While the infection may be acquired from casual contact and from a large number of foci, by far the most important focus of infection is the active case of pulmonary tuberculosis. Opie and others have demonstrated that infection occurs before the fifth year of life in 80 per cent of the children of families having a member with open tuberculosis, and in only 20 per cent of preschool children in families not harboring a source of infection. Therefore, the number of infected individuals increases with the opportunity for contact with active sputum-positive cases. Chronic forms of pulmonary tuberculosis expose and infect more individuals than the acute forms, which cause death more rapidly than the chronic forms. The chronic fibroid case is being found and recognized more frequently as one of the great sources of danger. These facts should serve to emphasize the great importance of the human reservoir of infection.

Tuberculosis has many ramifications in the community. It is a disease which slowly creeps through the community and insidiously attacks all age groups. It does not cause, as a rule, very much disability in the early stages of the disease. As a result of the lack of early symptoms and clinical signs a great many people allow the infections to reach a stage in which it is difficult to help the patient. Therefore, with such a difficult problem, attention should be directed to the groups in the population which are likely to be attacked first by this infection. We know that infants and children are usually the ones in which the disease occurs as a primary infection. In these two groups, tuberculosis spreads rapidly and causes certain types of disease, according to circumstances of exposure, dosage and virulence of the organism and the resistance of the individual attacked.

In infants and children, tuberculosis is manifested in three forms. In infants who are constantly exposed to tuberculosis, the

various acute types of the disease occur. These acute types, as a rule, are fulminating infections, such as tuberculous meningitis and miliary tuberculosis, which result in death of the patient in a majority of the cases.

In children, there occurs a type of disease in which there is a diffuse or circumscribed lesion in the lung with involvement of the tracheobronchial lymph nodes that results from a first infection of the pulmonary tissue with the tubercle bacillus. This is the usual type of tuberculosis which is seen and recognized as the childhood type of the disease. It is thought that most adults who develop pulmonary tuberculosis acquire their infections sometime during childhood. It is also held that adult pulmonary tuberculosis is the result of a reinfection from an exogenous or endogenous source. Very few individuals are infected for the first time after they reach adult life. There is, however, some difference of opinion regarding this point of view.

Krause states that a great permanent effect could be exerted toward the eventual control of tuberculosis in later life if the disease in children could be thoroughly healed. The prognosis in childhood tuberculosis is usually good. The mortality rate in children with this type of tuberculosis is low as compared with the number of children infected. This means that in most cases there is an unusual ability on the part of the child to care for the infection. If it were possible to find infected children and place them under treatment, it seems reasonable to expect that the incidence of active pulmonary tuberculosis in adult life would be greatly decreased.

The other type of infection with the tubercle bacillus appears in children ranging in age from 10 through 17 years. In this group, usually spoken of as the high school group, parenchymatous involvement of the lungs is often present and represents in many instances a continuation of primary infections received earlier in life. Females of this age period are especially likely to be attacked and the disease is likely to reach an advanced stage before it is recognized.

The prognosis of active pulmonary tuberculosis in this age period is poor. In this adolescent group, the disease is now assuming greater proportions.

There is an attitude on the part of some people to overlook the fact that tuberculosis may be best controlled by emphasizing the problem in children. It might be well at this point to review the measures which are available and useful to physicians in the diagnosis of childhood tuberculosis.

A careful history of exposure of a child to an active case of tuberculosis is of prime importance. A history of exposure cannot always be obtained, but when it is present it is of great value. Opie and McPhe-dran found seven times as many and Rathbun found nine times as many cases of tuberculosis in children who had a history of exposure to an active case of pulmonary tuberculosis as in children with no history of exposure.

Many children have the childhood type of tuberculosis without manifesting any symptoms. Those apparently in good general health may have a progressive focus of the disease. Either the childhood or the adult type of tuberculosis may be present in overweight, average weight, or underweight children. Hetherington compared the weight in relation to tuberculous infection and came to the conclusion that weight cannot be used as an index of tuberculosis until the disease has undermined the health of the individual. The usual symptoms of tuberculosis, such as fatigue, cough, and fever, may be present in children with the childhood type of the disease, but they are more likely to be absent in a large percentage of the cases. Involvement of the pleura may be present in children without producing symptoms. When the above symptoms are present, they may be of great assistance in the diagnosis. The absence of symptoms, on the other hand, should not deter one from making a tentative diagnosis and instituting further examinations.

It is not possible, as a rule, to demonstrate physical signs in childhood tuberculosis. Numerous signs have been described, but they are very rarely elicited. Even



though lung findings are present infrequently, a careful examination should be made. If nothing is found on physical examination by which a diagnosis of tuberculosis can be made, other defects may be discovered, which, if remedied, would assist greatly in the eventual recovery of the patient.

Tuberculin was first produced by Koch. In the beginning, it was subjected to many abuses and there is still a great deal of confusion as to its value. The confusion which exists now probably arose as a result of its use in the treatment of tuberculosis soon after its discovery. At the present time the therapeutic use of tuberculin should be confined to only a few conditions which are considered to be associated with the tubercle bacillus as the etiological agent.

The most important use of tuberculin is in the detection of infected individuals. It may also be used to estimate the prognosis in cases of tuberculosis and to determine the distribution of tuberculous infection in various population groups and communities. Positive tuberculin tests in school children will afford the physician an opportunity to trace and discover the sources of infection which are usually active cases of pulmonary disease in the home. It is possible by this measure to find and eliminate foci of infection in the community.

There are several methods by which tuberculin may be used for the purpose of detecting individuals infected with tubercle bacilli. The cutaneous test, first devised by Pirquet, in which a small area of skin is sacrificed, and a drop of old tuberculin applied to the abraded surface, is still used by some workers. The intracutaneous test of Mantoux is now accepted by most workers as being more accurate than the cutaneous method. The intracutaneous test is performed by injecting a solution of known strength of tuberculin intradermally. It is possible to standardize the technique and to inject definite amounts of tuberculin by this method. Aronson reports 25 per cent more positive reactions with the intracutaneous test than with the cutaneous test. According to other investigators, the Pirquet test will give only approximately 50

to 65 per cent of the positive reactions, while the intracutaneous test, if given in sufficient strength, will give almost 100 per cent positive reactions in infected individuals.

In a recent study by Hart of 1,030 patients with tuberculosis, only 3.7 per cent failed to show positive reactions to tuberculin when injected with 0.1 mg. (1-1000 dilution) intradermally. In the group of patients who failed to give a positive reaction to 0.1 mg. (1-1000 dilution) certain conditions were found to be present: (1) advanced pulmonary tuberculosis with toxemia, (2) a few cases of bone or joint tuberculosis and a few nontoxic cases of active tuberculosis with positive sputum, and (3) a few cases either quiescent or approaching quiescence. It should be added that during or following recovery from the acute infectious diseases and in any chronic debilitating condition an individual with a tuberculosis focus may give a negative tuberculin reaction. Thus it can be seen that in only a few conditions in which tuberculosis is present does the tuberculin test fail to reveal those who are infected.

A positive tuberculin test means that the individual is harboring a tuberculous focus containing live bacilli. This does not mean that the lesion is progressive and producing symptoms. A positive tuberculin test in infants and children under five years of age indicates grave tuberculous infection resulting from recent persistent exposure. It should be a warning sign for immediate examination, supervision, and treatment of the child. In children over five years of age a positive tuberculin test may or may not mean that the focus of infection is progressive. It does, however, call for careful observation of children in this age period. The prognostic significance of positive tuberculin reactions diminishes with increasing age. The intensity of the tuberculin reaction is in a general way a measure of the significance of the infection, but accurate deductions as to the extent or stage of the underlying lesion cannot be drawn from the tuberculin test.

It should be emphasized that, while the tuberculin test is of great value in the diag-

nosis of tuberculosis in early life, this test can be of great importance when negative. A definitely negative reaction usually indicates that the individual does not at the time he is tested have a tuberculous focus containing live tubercle bacilli. The tuberculin test offers the practitioner of medicine a very important diagnostic aid as regards tuberculosis in children.

The use of roentgen ray examination in the diagnosis of tuberculosis is now recognized as an almost routine procedure. Roentgenologic examination furnishes a measure of the severity of the tuberculous infection by revealing the extent and character of the lesion. Another advantage of the X-ray examination is that by this method it is possible, by taking serial pictures, to follow the progress of the pathological lesions of the patient and in this way to give a more intelligent prognosis.

All of the various procedures which have been enumerated should be employed in making a diagnosis, as no one method is satisfactory when used alone. It should be remembered that in children with childhood tuberculosis there may be no history of exposure to or symptoms of tuberculosis and the physical examination may reveal nothing of significance. It should be emphasized that each patient represents a distinct problem. For this reason all available methods applicable in the diagnosis of the childhood type of tuberculosis should be used. Of the procedures available, it will be found that the tuberculin test and roentgen examination are more helpful and reliable than any others in reaching a diagnosis. A great contribution to the control of tuberculosis could be made if those engaged in the practice of medicine would more universally accept this idea and apply the procedures which have been discussed.

It is well at this point to call attention to the procedures that may be instituted toward treatment and control of tuberculosis in children. One of the most important points to be emphasized is the breaking of contact between the patient with active tuberculosis and those in close association with him. If exposure is allowed to go on, repeated reinfection may cause contacts to

develop one of the fatal types of the disease. The source of infection should be removed when possible. When this is not possible, further contact with the patient in the home should be discontinued. The prevention of further infection should be the first step that one attempts in every case. If this is possible, a great many children who have been infected by contact are able to heal the lesions they have already acquired without the institution of any other procedure.

It is advisable to observe infected children, as they should be considered potential cases of the adult type of tuberculosis. Children with the adult type of parenchymal pulmonary involvement should be treated as any case of pulmonary tuberculosis. The treatment of most cases of the childhood type of tuberculosis is based on physiological principles which involve the supervision of physical activity, rest, and diet. Extra rest periods for children with this type of the disease are considered advisable. Inclusion of vitamins in addition to those present in a balanced diet is necessary. Physical defects which may prevent the growth and development of the child should be removed. In most cases of childhood tuberculosis, if these measures are carried out, a majority of children will be able to heal their lesions.

It is necessary to keep in touch with children presenting this type of tuberculosis so that other measures may be instituted in the occasional case that does not respond to the ordinary measures. It should be emphasized that tuberculous foci in children are a constant source of danger, not only in childhood, but also in adolescence and adult life. These foci may suddenly become active, even though they may appear to be retrogressive. The amount of protection afforded the child depends upon the strength and integrity of the fibrous tissue enclosing the areas of the disease. We have no means of measuring this. Healing is a slow process and it may take a long time.

What are the advantages in the control of tuberculosis in children? The childhood type of tuberculosis presents what may be called the golden opportunity for preventive



work in tuberculosis. Childhood is often spoken of as the "seed time of tuberculosis," and it is the period in life when the disease first attacks the individual. Therefore, it is the most important period in the history of tuberculous infection, because it represents the true incipient stage of the disease. It is possible to effect a more rapid and permanent cure at this stage of the disease than at any other period of the infection.

It should also be emphasized that, fortunately, tracheobronchial tuberculosis is not only curable, but also it is not communicable, since the infecting bacilli are still enclosed within the gland capsules and have not spread to the parenchyma of the lungs. By curing patients before the disease extends into the pulmonary tissue, we not only offer the patient a better opportunity to remain free from disease in later life, but we also protect the public from potential foci of infection.

It has been stated that, although a great deal of educational work has been done, and much literature concerning prevention distributed, most of the efforts have produced only superficial results in that they rarely reach in an effective way those who need educating. For prevention to be effective, it is necessary to come into actual contact with the individual in whom tuberculosis is found. It is apparent that a great amount of effective educational work can be done by physicians in prevention and control with respect to tuberculosis in children, since cooperation with parents and other members of the family is likely to be better when they are faced with a concrete example, especially in children. Instructions will be carried out more carefully under such circumstances. Therefore, it should always be kept in mind that when we institute control measures in children with tuberculosis we fail to complete the task, if we neglect to give accurate information concerning tuberculosis, and attempt to educate those concerned with the management of the particular case at the time it arises.

It should be emphasized, finally, that the

measures for the control of tuberculosis in children can be instituted at a much lower cost than is the case with tuberculosis in adults. While it is necessary to have institutions for tuberculous children, it is possible to care for a great many of them at home more easily and with greater success than in the case of adults. The long period of hospitalization required for adults is not necessary in the average child with tuberculosis. The cost of cure in children is very small in comparison with the protracted, expensive treatment in adults with active pulmonary tuberculosis. Both the family and the community are benefited by instituting control measures against tuberculosis in children.

What most children with childhood tuberculosis need is an opportunity to allow their lesions to heal. The first problem that arises in affording this to children is the recognition of the disease. It is almost always true that the practicing physician has the first opportunity not only to ascertain the presence of tuberculosis, but to aid in its prevention. It is the physician in most instances who first sees the actual or suspected case of tuberculosis. If the problem of tuberculosis could always be kept in mind, and this disease suspected or considered in making a diagnosis, a great many more cases could be discovered by physicians in a stage when the prognosis is good. New knowledge with reference to childhood tuberculosis has brought to the physician greater responsibilities for the cure and prevention of this condition. In no instance is the obligation of the physician in the cure and prevention of disease more binding than in the prevention of tuberculosis. This obligation is not lessened because of the presence of agencies having for the purpose of their existence the eradication of this and other diseases. The physician represents the first line of defense against tuberculosis, and no organized campaign against tuberculosis or any other disease can be carried to a successful conclusion without the assistance, vigilance and support of the practitioner.

Since a great responsibility for the con-

trol of tuberculosis rests with the practitioner of medicine, facilities for assisting him to become better acquainted with the problem should be made available. It is likely that physicians have depended in too great measure on public health agencies for the control of tuberculosis. The public health agency can make definitely greater contributions toward the control of this disease by assisting physicians to become more familiar with the problem. Local health departments should be used as centers, where, with the aid of the state health department, and with the approval of the local or district medical societies, diagnostic case-finding clinics could be organized and administered. On the other hand, physicians can render a great service to local health departments by reporting their cases of tuberculosis, and in reinforcing the efforts which health departments are making in the education of tuberculous patients and contacts in the home. This can be done effectively in cooperation with and under the instruction of the family physician.

Another opportunity which may be presented to the medical profession in the control of tuberculosis is the use of state and county tuberculosis institutions for the purpose of instruction in the diagnosis and treatment of this disease. Short courses of systematic instruction in such institutions would furnish to physicians of a state an opportunity to become more familiar with the problem of tuberculosis. Such a plan should be possible without any great change in the equipment or personnel of the institutions. By conducting such courses of study at definite intervals, there would be distributed over a state a large number of physicians interested in tuberculosis. Such a plan would, in time, be of value in the control of this disease, and tuberculosis institutions, while they are at the present time rendering a great service, would make even a greater contribution in regard to the control of this infection.

In summarizing this discussion, certain points should be emphasized. While there has been a marked decline in the mortality rate from tuberculosis, there has been no

parallel decrease in the number of individuals infected with the tubercle bacillus. The human reservoir of infection at the present time is more important as a source of tuberculosis than cattle. Control measures against tuberculosis should be directed toward the disease in adults and emphasis should be placed on the problem in children. By doing this it will be possible to place under supervision those whom the disease first attacks and in whom the prognosis is good. It is also probable that, in placing infected children under observation and treatment, pulmonary tuberculosis may be prevented in adult life. In the diagnosis of the childhood type of tuberculosis, the intracutaneous tuberculin test and roentgen ray examination are most valuable to the physician. The practitioners of medicine have a definite responsibility as regards the control of tuberculosis, due to the fact that patients present themselves first to them for diagnosis. In assisting physicians with this problem, local and state health departments can be of service by providing diagnostic case-finding service. Tuberculosis institutions may also render a greater service by extending to physicians facilities of the institutions, whereby physicians may be able to obtain instruction as to the diagnosis, treatment, and prevention of this disease.

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## AMEBIC DYSENTERY\*

JACK WITHERSPOON, M.D., Nashville

IN 1917, FAUST studied 100 soldiers with ameba histolytica and ameba cysts in the stools. Thirty of these had diarrhea with blood and mucus in the stools, and the other 70 were not sick and showed no signs of disease except the finding of ameba histolytica cysts in the stools. They had normal bowel movements or were constipated.

However, in the next three months every one of these later had a short or more prolonged spree of diarrhea.

Craig says that histolytica ameba is always a tissue parasite and always causes ulceration when in the colon.

When a survey discloses that 5 or 10 or 53.2 per cent of people in a given community harbor ameba histolytica parasites it means that those people have been sick, are sick, or will be sick, and that they are potential disseminators of the disease.

Is it any wonder that a nation-wide epidemic of amebic dysentery resulted from the situation in Chicago? The present interest in amebic dysentery is due to the Chicago epidemic and the publicity given it by the newspapers and lay magazines as well as the medical periodicals.

The Quarterly Cumulative Index Medicus lists 105 titles on Amebiasis and 9 on Liver, Amebic Abscess for six months after December, 1933. In the same time last year only 25 similar articles were published.

The parasites causing amebic dysentery and the lesions caused by it were first described by Losch in 1875. His work was confirmed in this country by Osler in 1890, Stengel in 1890, Musser in 1891, and Dock in 1891.

In 1903, Huber and Schaudinn differentiated endomeba histolytica from the non-pathogenic endomeba coli, and, in 1913, Walker and Sellards proved conclusively by experiments on human volunteers that en-

domeba histolytica is the cause of amebic dysentery. (Craig.)

Twenty years ago, amebic dysentery was looked on as a tropical disease, and we tried to trace every local case to a former residence in the tropics.

It was thought that the returned soldiers of the Spanish-American war, those who had been in Cuba or the Philippines, were in some way spreading the disease.

Ten years ago, it was recognized that the disease was firmly planted in certain sections of the South and Middle West and especially in California.

A comprehensive discussion of amebic dysentery was had in Kingston, Jamaica, in 1924, on the occasion of an International Conference on Health in Tropical America, sponsored by the United Fruit Company; and Doctors James, Deeks, Runyan, Her- rick, Garin, Lapine, Leonard Rogers, Kofoid, Boyers, Swezy, Hegner, Seals Har- ris, C. C. Bass, Bailey, Ashford, and others took part in the discussion. The transac- tions of this conference is a most important contribution to our knowledge of this dysen- tery.

The developments of the past winter have called our attention to the fact that this dis- ease is not confined to any section of our country.

The percentage of positives found in a survey is influenced by the experience of the examiners, and the method and number of examinations as well as the section of the country where the survey is made.

Meleney, who found 11.4 per cent posi- tives in 20,237 individuals examined in Ten- nessee, thinks that the percentage would have been doubled, or 22.8 per cent, had five specimens been examined instead of one for each individual.

But, on a basis of one examination, Faust found 20 per cent in Wise County, Virginia.

Faust found 13.7 per cent in 11,000 indi- viduals in New Orleans.

\*Read before the Tennessee State Medical Asso- ciation, Chattanooga, April 10, 11, 12, 1934.



Sistrunk records the presence of *endomeba histolytica* in 17.2 per cent of 145 patients at Mayo Clinic, while Griffin found 4.5 per cent in 1,700 patients, and Sanford 22.5 per cent in 5,000 patients, in separate investigations.

In California in 1926, Kofoid found 13.1 per cent in 6,834 persons, Kessel and Mason found 9.8 per cent in 2,731 persons, and Johnston David and A. C. Reed found 9.6 per cent in 1,000 male prisoners in a California prison.

Craig says that, while no nation-wide survey has been made, he estimated that 5 to 10 per cent, or 6 to 12 million of our 120 million, harbor this parasite.

A recent examination of freshman students of the University of Pennsylvania, boys living in Pennsylvania and New Jersey, showed 4.1 per cent infected.

The extremes of incidence are reported by Andrews and Paulson of Baltimore with .27 per cent in 522 individuals, and Kofoid and Swezy with 53.2 per cent in 154 students in the University of California.

Dr. Herman Bundesen reported on the Chicago epidemic in the March, 1934, number of the American Journal of Digestive Diseases and Nutrition.

He said that on August 15 it came to the attention of the Chicago Board of Health that two people were suffering with acute amebic dysentery and that they had come from the same hotel.

By September 1st, 364 food handlers from this hotel had been examined, and 26 were found with ameba in the stools, and, of these, 15 had some diarrhea. These were excluded from service, and as cases continued to appear a re-examination of the personnel was done.

On October 25th, 60 of these negatives on former examinations were found infected.

Then 498 nonhandlers of food in this hotel were examined, and 100 of these were found infected.

A questionnaire was sent to 22,000 former guests of the hotel, and a committee was assembled to study the outbreak.

It was brought out that in addition to the food handler-carriers the sanitation of

this hotel was sadly at fault. The storeroom and refrigerator room in the basement had been flooded from sewers; the plumbing system, frequently repaired by successive generations of plumbers, had been so mixed that pipes carrying drinking water, flushing water, and sewerage had been hooked up with each other, and the water pipes were susceptible of contamination when overloaded.

The committee reported that this was a water bourne and not a carrier spread epidemic.

Dr. Meleney, of Vanderbilt, a member of the investigating committee, in a paper read to our Academy of Medicine on February 27th, gives convincing proof that this hotel epidemic came from infected drinking water. He explains the absence of typhoid by saying that the city water is heavily chlorinated, and that chlorination destroys the colon and typhoid bacilli, but it has no effect on the ameba cysts.

Dr. Bundesen says that, up to February 1, 1934, 774 cases of amebic dysentery had been reported from 213 cities, with 42 deaths, the probable origin being traced to the Chicago outbreak. They also had discovered 1,130 carriers.

Meleney says that hotels with antiquated plumbing systems in other cities, including our own, may prevent hazards similar to those in the incriminated hotels in Chicago, and the greatest good that has come from the Chicago epidemic is that the importance of amebiasis has been emphasized to the medical profession and laity of this country.

Amebiasis is a common infection in America. Amebic dysentery is a stage of amebiasis in which there are frequent loose stools containing blood and mucus and actively *motile* amebae. The parasites are usually encysted when diarrhea is not present.

Ameba cysts are able to survive for many weeks in a moist stool.

The active motile form is not able to pass through the stomach of man, but cysts, when ingested, readily pass through the digestive juice barrier and through the small intestine to the caecum and first part of the large bowel, where they exist.

The cyst, usually containing four nuclei, forms a four-nucleated ameba, and this by a process of division of nuclei breaks up into eight small amebae. These small motile amebae are ready to invade the tissue and lining of the large bowel.

They may remain for an indefinite time without causing recognizable symptoms, but the amebae will be found in ulcers of the mucous membrane, or they may penetrate through the submucous coat.

Diarrhea and dysenteric stools may occur with the expulsion of actively motile trophozoites, or the amebae, under unfavorable conditions of drying and constipation, may round up into the precystic stage.

Patients with dysenteric stools do not expel cysts, according to Craig, and are not so important as a public health problem as the healthy carrier who has no diarrhea, but is passing out numberless cysts. The cysts find their way to food through contaminated drinking water and on uncooked vegetables, such as radishes, onions, lettuce, celery, that have been fertilized or washed in contaminated water.

Food handlers, such as cold meat cutters, salad makers, dishwashers, water and milk servers, and those who handle food not cooked just before eaten, have the best opportunity of spreading the disease.

Frye and Meleney made a study of flies, rats, mice, and some domestic animals as possible carriers of intestinal protozoa in man in a rural community and concluded that the house fly is probably a factor in the spread of *Endameba histolytica* in the community studied.

Viable cysts were found in the droppings from flies five minutes after feeding on infected feces and as long as sixteen hours thereafter. Cats, dogs, chickens, and pigs were found not to act as hosts or carriers of the disease.

#### THE PATHOLOGY OF AMEBIC DYSENTERY

The ameba *histolytica* is a tissue parasite. It attacks and produces ulcerations of the mucosa of the colon. It ingests red blood cells. The ulcerations in the bowel are most commonly found high in the rectum, at the

rectosigmoid junction, and in the caecum and proximal transverse colon.

When epidemic, it has appeared that the disease is much more virulent and destructive than when in sporadic cases. Those with long experience with the disease have been shocked at the high mortality in the cases originating in the Chicago epidemic. Autopsy reported by Lund and Ingham showed "the entire large bowel was ulcerated. The caecum and ascending colon were gangrenous, and there appeared to be only a small zone near the rectal end that still preserved a little mucosa." This man died five weeks after being infected, and their second case, who died August 26, less than two months after exposure, showed ulcerated and gangrenous colon, a right lower quadrant abscess, and a large liver abscess that contained many amebae *histolyticae*.

Craig has led in claiming that the parasite does not vary in its virulence, and explains the high mortality on the basis of lowered resistance of the victim, but Meleney and Frey show by experimental work on kittens that there is a vast difference between a *strain* obtained in the hill country of Jackson County and one obtained from an acute case in West Tennessee.

The parasite has been known to invade the lung and brain and to cause ulceration of the skin.

Proctoscopic examination will frequently differentiate this disease from rectal cancer or chronic ulcerative colitis of Buie and Bargan.

The amebic ulcer is crater like, has swollen, ragged edges, is deep and usually filled with a small clot of blood or mucus.

Scraping from these ulcers will show numerous actively motile ameba.

The period of incubation is variable. When accurately known, it varies from a few days to three months.

The symptoms of amebic dysentery begin with loss of appetite, soreness of the abdomen, sense of fullness about the right lower quadrant, and diarrhea with three to twenty stools in 24 hours, and rectal straining if the lesions are low. Fever, not always present, may reach 103 or 104 degrees, and the leucocyte count may be as high as 18,000



to 25,000. The skin becomes sallow but not jaundiced, and the blood shows a moderate anemia. The stools show blood and mucus and shreds of necrotic material mixed with fecal matter. Some stools may be watery and bloodstained, and occasionally large hemorrhages occur from the bowels. In the quiet stage, there is no fever, no soreness, no blood, constipation occurs, and the stools show only cysts.

Complications, such as liver involvement, or perforation, or abscess formation, give classical symptoms.

X-ray of the colon usually shows spasticity and absence of normal haustral markings, and occasionally the double lining of retained mucus in area involved.

Local tenderness may be discovered in fluoroscopic examination.

#### TREATMENT

It is to be hoped that the lessons from this epidemic will give us some better methods of prophylaxis. We know that the disease can be spread by water, food, carriers, and flies, and that the acute case is not the one to fear.

In treatment of the acute amebic dysentery, several groups of drugs have been used successfully, but almost all of them have certain disadvantages.

Powdered ipecac caused too much vomiting and gave way to emetin and bismuth emetin iodide. Emetin, the most popular, is given hypodermically, but the dose must be guarded because of its damaging effect on the myocardium and lowered blood pressure that follow its too free use.

Arsenic is used in the form of neoarsphenamine, stovarsol, acetarsone and carbosone. The last named is least toxic and most effective and less likely to cause arsenical dermatitis.

Iodine compounds are used in the form of yatren anaydine and vioform.

Bismuth subnitrate in large doses is favored by some. We have used emetin one-half grain twice daily for a few days and carbosone .25 grams three times daily for a week, and the discomfort can be controlled with paregoric and bismuth and saline irrigation of the bowels. The patient

should be put to bed if acutely sick and the diet must be free of roughage and fibrous foods.

The use of kerosene oil for enema was favored at one time, but at the present we irrigate the colon with normal saline solution and quinine solution 1-2000.

The treatment cannot be terminated in a week or in a month, but must be repeated at intervals of three weeks, then three months, as long as cysts are found in the stools.

#### SUMMARY AND CONCLUSIONS

Amebiasis is a very common disease, five or ten out of every hundred persons harboring the parasite. The percentage is much higher in certain communities. It is caused by the protozoa ameba histolytica described by Losch. The parasite is never harmless. The parasite exists in the bowel as motile trophozoites and as cysts, and the disease is spread by the ingestion of cysts in water or food.

The cysts are transmitted by polluted water and infected uncooked food. Food may be infected by flies that have access to infected feces.

The disease causes ulceration of the colon and other organs and produces diarrhea when acute.

The disease is diagnosed by finding of the microscopic ameba histolytica or its cyst in fresh evacuated feces of the suspected individual.

The disease can be cured by certain well-known drugs.

#### DISCUSSION

DR. F. E. MARSH (Chattanooga): I think Dr. Witherspoon used very rare judgment in selecting amebic dysentery as his subject, and I have enjoyed his very excellent presentation of this most important disease.

The Chicago epidemic last fall again brought to our minds the prevalence of the disease, and the dangers which the latent cases often afford the community.

In a recent editorial in the *Annals of Internal Medicine*, this statement was made: "It is not in connection with the outspoken clinical manifestations of amebiasis that the main problem exists; it is rather with the far greater number of instances in which amebiasis is present without producing any characteristic symptoms."

It has been shown that the parasite may pro-

duce marked lesions, particularly in the caecum, without any appreciable clinical signs. Hence, since lesions do occur in many individuals without symptoms, we should discard the term "carrier" and call all cases either latent or active. These cases, even though they may be symptomless, are a constant source of infection to others. Hence it is that the incidence of amebiasis is so great.

The routine which should be followed in all cases presenting themselves for general examination is examination of the stool and inspection of the rectum by the use of the proctoscope. This, I think, is very important. No physical examination is complete without a proctoscopic examination. It is very easy to do, requires very little time and effort, and often is quite illuminating.

On proctoscopic examination, small ulcers are often detected in these latent cases, from which a little mucus and blood can be obtained and examined under the microscope, and motile amebae can be found; whereas, on stool examination, even a warm stool, we very often fail to find amebae.

A word as to treatment. In all cases of ulcerative colitis, even with the absence of motile amebae microscopically, a therapeutic course of emetine is a wise procedure. It will do no harm and occasionally may bring about a cure.

DR. J. A. McINTOSH (Memphis): Dr. Witherspoon has the ability to present to his medical colleagues subjects that provoke them to talk.

Several years ago, I made as many as 953 fresh fecal examinations of patients passing through the St. Joseph's Hospital, in Memphis, and thereby increased my acquaintance with the endomeba histolytica and other types of protozoa. It requires considerable experience to identify in fresh material the various types of intestinal protozoa. A great many facts about intestinal protozoa are not known. Their disease-producing effect is but vaguely known.

Not only are members of the amebic family found frequently in stool examinations, but also the members of the family of Mastigophora, the Flagellates. It is hard to incriminate any of these parasites as being disease producers, but one can turn to the endomeba histolytica as furnishing something that we can definitely tie to. When we find endomeba histolytica with ingested red cells, associated clinical symptoms, and proctoscopic evidence of disease, we can say almost with certainty that it is responsible for the sickness.

However, there are times when you can examine the stool and find undeniable endomeba histolytica with absolutely no existing clinical symptoms at the time the examination is made.

A great many people, it seems to me, learn to live with their protozoa, they simply act as host to the protozoa. I am of the opinion that of all examinations that physicians do there is none that yields more information than stool examination. One becomes familiar with the appearance of debris of digestion, one enlarges the knowledge about protozoa, not only endomeba histolytica, but others,

and oftentimes he can relieve his patient's symptoms if he rids him of the protozoa.

Dr. Witherspoon has well said that carbozone, a low toxic arsenical, is the supreme remedy, the best antiparasiticide or antiprotozoicide that we have. There are others, and they can be used, of course, simultaneously with it.

He has brought to you a subject that is well worthy of your attention, and, if you do no more than take the bowel movement (four or five are much better than just one stool), you will enlarge your knowledge about protozoa.

DR. DAVID R. PICKENS (Nashville): I would like to emphasize one thing that Dr. Witherspoon brought out—not to depend upon the stool examination for diagnosis of amebic dysentery. Repeatedly I have made examinations of stools to demonstrate the amebae. To my way of thinking, a negative stool is not worth anything. It is easy to make a proctoscopic examination and take a smear by curette directly from the ulcer, and you are more likely to find amebae. The ulcers are rather typical. If one is accustomed to looking at them, they are small, deep ulcers with red margins, situated usually on the prominent part of the bowel.

In regard to the treatment, first, no case of a mucous colitis should be labeled such without an examination for amebic dysentery.

I was very much chagrined a few months ago to operate on a rectal abscess, a very extensive affair with rectal infection, a case of mucous colitis, and the patient had had mucous colitis for months, more or less for years. We examined the stools and found amebae. This case had amebic dysentery labeled a mucous colitis, also rectal abscess.

In regard to treatment, I do not think Dr. Witherspoon meant to leave the impression that emetine will cure amebic dysentery. It will relieve the acute symptoms, but I don't believe he intended to leave that impression, and I am sure he doesn't treat them with emetine alone. Emetine will relieve the acute symptoms, stop the bleeding, and don't forget that emetine is a dangerous drug. I think eleven grains is recommended as being the maximum dose to be given at one time. Emetine with some of the arsenic and iodine preparations, I think, in the majority of cases will eliminate the infecting organism.

These cases are prone to recur. They should never be discharged as cured until there are several negative stools. Have them return in a few weeks or two or three months and examine them again, not only microscopically, but proctoscopically, and see that the ulcers are entirely well.

The ones that are associated with other parasites are the ones that I have trouble in eliminating. They are more prone to recur.

DR. J. R. THOMPSON (Jackson): I had intended merely to listen to Dr. Witherspoon until he mentioned the fact of the different strains found in Tennessee by Dr. Meleney. The strain



he mentioned from West Tennessee happened to have been under my personal supervision. It happens that a small community in the corner of Madison County in West Tennessee on the banks of the Hatchee River has had endemic and epidemic outbreaks of amebic dysentery over a period of four or five years. It is pretty well traced to one man who moved in there about five years ago. Out of a population of about 140, we have about thirty-six positive individuals. At the time this became epidemic and was reported to the Health Department, through the help of Dr. Meleney and the Department of Medicine at Vanderbilt University, surveys were made and active treatment instituted. These individuals were all of the tenant farmer class, no screening on any of the homes, all of them open privies, no sanitary toilets at all.

We decided that inasmuch as carbosone had just recently been put on the market we would attempt to treat those cases strictly with carbosone. Some of those individuals before this had had as many as seventy-five hypodermics of emetine and

were still having very active symptoms. Carbosone was given to the entire group. To show you the harmlessness of carbosone, one of the individuals took twenty capsules, one capsule twice a day for a period of ten days, got on the train and went to Memphis and told them he had amebic dysentery, they gave him ten more, and he came back to me and said he still had it, and I gave him ten more, and he took sixty capsules over a period of thirty days and had no ill effects whatsoever. He went on and committed suicide by cutting his throat a year later.

That strain there has been very active, and we have not been very successful in eradicating it, because of the fact that the sanitary conditions are so low. We believe, however, that most of our failures are due to reinfections.

On several cases, carbosone did not work as well as it did on others. Those cases were immediately given anayodin, and almost without exception we got favorable results, only to have reinfection occur at a later date.

## ASPERGILLOSIS

W. RUFUS SMITH, M.D., Knoxville

FUNGUS infections of the lungs, by their lack of characteristic marks, are difficult to recognize. They masquerade in the likeness of a number of well-known pulmonary conditions, so that they can only be identified after a searching investigation. Probably we should be more suspicious when there is pulmonary disease that does not readily and easily fit into one of the accepted diagnostic categories, and this suspicion should stimulate the effort to demonstrate the presence or absence of fungi in the secretions.

Fungus disease of the lungs may resemble any of the subacute or chronic pulmonary affections; but it is more commonly mistaken for tuberculosis. While fungus infections are commonly secondary invaders of the lungs, a primary and independent infection is a rare disease, though it does occur.

*Aspergillus* belongs to the mold family, there being several types in this group. It can cause a primary and independent infection of the lungs. The earliest clinical observations were made on pigeon crammers by Chantemesse, Dieulafoy, and Widal in 1890. This condition is common in pigeons, both in the lungs and other tissues of the body, and is frequently conveyed to those who feed pigeons by mouth. It also is occasionally seen in hair sorters, sponge cleaners, and those who work in damp, moldy cellars, etc.

Clinically, aspergillosis is indistinguishable from pulmonary tuberculosis. It begins with a cough, fever, and there may be some hemoptysis. The physical signs are those usually found in pulmonary tuberculosis, though the location of them may be of value in differentiating the two. In tuberculosis, we expect to find the trouble from the hilum upward, while the other condition usually is found in the bases. In addition to the type resembling tuberculosis, there occurs a type characterized by se-

vere bronchitis and often accompanied by asthmatic symptoms.

In reporting this case, I wondered just how many cases of so-called tuberculosis were really a fungus infection, and it is for this reason I present the following case.

Mr. S., age 45, weight 133, general appearance fair. In May, 1933, he developed a slight cough, bringing up a lump of expectoration every morning about the size of an average marble. This sputum was very tenacious and was dotted with black specks. He had some dyspnea, appetite was fair, no energy, and was losing weight. He had had a few mild night sweats at the onset.

Past history of influenza in 1919 or 1920, with a very slow recovery. No other diseases of importance.

Physical examination of all systems were negative except the chest. On the right side there was diminished expansion and slight impairment of resonance over entire chest. Breath sounds were harsh, and there were occasional dry rales in right apex. Breath sounds were markedly diminished, and a very few distant moist rales in the right base. Left chest revealed no abnormal findings.

Blood and urine revealed nothing abnormal. Six sputum examinations were negative for tubercle bacilli, but one or two revealed some abnormal cells, which I took to be some form of fungus cells. After several cultures of sputum were made, a pure growth of *aspergillus fumigatus* was obtained.

X-ray of chest revealed small amount of fibrosis in right apex. There was considerable fibrosis with a round, infiltrated area about three inches in diameter in the right base.

Of all the literature I have been able to review, it seems that everyone is agreed on the iodides in one form or another, given



orally or intravenously, and to be given in large daily doses. This is not specific, though it does cause marked improvement in some cases.

In discussing this case, one can readily see how easily a diagnosis of tuberculosis could have been made on the history, physical findings, and the X-ray findings. I

placed this patient on the same routine as used in the treatment of tuberculosis, and gave him 45 grains of potassium iodide orally, 15 grains three times daily. Up to the present time, the patient has shown remarkable improvement in every way, being entirely free of symptoms with little or no physical findings.

# THE JOURNAL

OF THE

## TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee  
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H. H. SHOULDERS, M.D., Editor and Secretary

OCTOBER, 1934

## EDITORIAL

### CREDIT WHERE CREDIT IS DUE!

The art of publicity is a great art. It is terribly abused at times, however, and very unnecessarily. It distorts facts, creates distorted impressions, and leads to distorted actions. A case in point is as follows:

Just a few days ago the head of the nursing council at Nashville, Tenn., gave an (alleged) interview concerning the work of the council, which was published in the Nashville Banner. The interview was given for the purpose of boosting contributions to the Community Chest.

The vital essence of the interview consisted of statements to the effect, first, that when the council was first organized some twenty years ago the infant death rate of Nashville was high, and *that the council has reduced*, by its activities, this high mortality more than half. Second, that more money is needed to complete the job.

This is a very simple incident of the distortion of facts, though it happens to be for a laudable purpose. Certainly the laudable purpose will stand upon its own merits without the distortion of facts. A few indisputable facts will show how misleading and unjust the statement was. First, doctors have paid more attention to the diet and care of infants right along in this some twenty years. A number of doctors have been in charge of child welfare clinics in Nashville all these same years, for which work no fees were received by doctors. In addition, the number of pediatricians in practice has multiplied many, many times. Next, the milk supply of Nashville has been improved tremendously in the years since

the council was first organized. The milk furnished the children of Nashville is probably as pure as that furnished in any city in America. The people who supply the milk are entitled to a large amount of credit, too, for the reason that we understand that the city ordinance on the subject has not been materially changed in twenty years. Notwithstanding this fact, wholesome improvements have taken place right along. Nobody could estimate the value of this improvement to infant health. In addition, excellent dried milk products have come into use. Other facts might be mentioned, but these suffice to show that the nursing council, however valuable and however capable, is entitled to a small fraction of the credit for a low infant death rate in Nashville.

Notice would not be taken of this incident but for the fact that there is so much misleading propaganda being fed the public on medical subjects. Some is manufactured and put out by people who know better, but who have selfish designs on the benefits, if any are to come from it. In other instances, it has origin in honest but biased souls who really think they could take money and power and do wonders with it. Both are equally dangerous people.

Such extravagant and misleading statements irritate those who have made such large contributions to infant welfare, and maybe create the impression that if the council were enlarged and given more money it would make unnecessary all other efforts.

### CONFERENCE OF SECRETARIES

For some years there has been held a conference known as the "Annual Conference of Secretaries of Constituent State Medical Associations." It is held under the auspices of the Board of Trustees of the American Medical Association. Such a conference was held in Chicago on September 21, 22, 1934. It has broadened its membership to such an extent that at the present time it is really a conference of the executive officers of the various state medical associations with the executive officers of the American Medical Association. It brings together into annual conference a group of



people who are vitally concerned with the present and future of organized medicine. The last conference was of particular importance. Many questions were discussed very ably, most of which cannot even be touched upon in a brief editorial. We formed a few impressions, however, which we will endeavor to express. First, concerning the large number of experiments that are being made affecting the practice of medicine in various parts of the United States, there is less enthusiasm for them now than was the case two years ago. Experience with the various schemes and plans has served to bring out faults which could not be foreseen. Every one who talks about them now talks of them as experiments and not as well thought out plans.

A well considered discussion of the English system of health insurance or panel practice was given, and no one should allow himself to make up his mind on this subject without reading the discussion given by Dr. Leland. It will be published in the Bulletin shortly.

It is very important that American doctors understand the British system and the way it has worked, for the very urgent reason that there is a strong disposition on the part of some leaders in the United States to pattern an American system after the British system.

A definite impression was formed that organized medicine in America is more definitely awake to its responsibilities than has ever been the case before. This is true with reference to the American Medical Association and with reference to the various component state associations.

We formed the impression also that the leadership of medicine in America is capable, energetic, and conscientious. The leadership is of such a character, in our opinion, that it will not be swept off its feet by wild promises nor by threats. These doctors, in the main, are familiar with the fact that, while many experiments have yielded results of inestimable value to humanity, experiments also have resulted disastrously both for the experimenter and the subject.

We do not decry experiments, but we do urge honest observations of results and not

biased assertions. We would interpret the general attitude of medicine as being favorable to the adoption of any sort of system or plan which has proven to be of value. This leadership, in our opinion, is equally opposed to the adoption of plans or the administration of dopes resulting from inadequate experimentations and false reports as to results. In other words, the sensible doctor is not yet willing to administer a treatment on the recommendation of a biased quack.

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#### THE AMERICAN LEGION AND CRIPPLED CHILDREN

Information has come to our office to the effect that a very sane, capable committee is to be formed by the Tennessee Department of the American Legion to formulate and execute logical plans in the interest of crippled children. This step is to be commended. The editor of the JOURNAL is glad to take occasion to commend the step. It is sincerely hoped that genuine good may come from the undertaking.

In this connection, may we suggest that there are many doctors in Tennessee eligible to membership in the Legion.

The National Commander, Mr. E. A. Hayes, is conducting a noble fight against communism in America. He, like others, fought to preserve democracy some years ago when it was threatened from without. He is now engaged in an equally noble fight to preserve democracy from threatening dangers from within.

*In our opinion, doctors could render a public service by becoming members of the American Legion.*

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#### THE CATHOLIC HOSPITAL ASSOCIATION AND THE TEN-POINT POLICY OF THE AMERICAN MEDICAL ASSOCIATION\*

The importance of distinguishing sharply in our thinking at all times between pro-

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\*This editorial appeared in the August issue of Hospital Progress. In addition thereto are some excerpts taken from a resolution adopted by the Catholic Hospital Association of the United States and Canada.

It is believed that the readers of the JOURNAL will find these of absorbing interest. They are therefore reproduced in full.

grams and policies is accentuated by the present chaos concerning Medical Economics. We are living through a period of extensive experimentation with an endless number of plans for supplying medical and hospital care to wider groups of the population at an allegedly lower cost. It has been repeatedly pointed out that many of these plans have been formulated without due regard for fundamentals in hospital practice or in medical practice. Insurance features have been stressed without due regard for that for which or against which insurance protection is purchased. The stress has been upon the dollar rather than upon that which the dollar is supposed to buy. Medical and hospital care are all too frequently offered as bargain sale commodities without a full understanding of the unpurchasable character of that which is offered for sale.

In the midst of all this confusion of thought, it is gratifying to find an outspoken declaration, brief and convincing, which restates the basic considerations upon which all developments in medical and hospital care must be founded. The Ten-Point Policy of the American Medical Association will, it is believed, form the basic foundation for any superstructure which can be legitimately and advantageously erected with the full approval of the medical profession, no matter what the circumstances may be in which our country may in the course of decades find itself.

The essential thought which runs through this ten-point declaration of policy is the principle that in the professional aspects of medical practice the medical profession must be considered supreme. The first principle points out that medical service must remain under the control of the medical profession. Medicine must remain "Master of Its Own House," and the simple reason is that no other person or group of persons can be considered "legally or educationally equipped" to exercise such control. For the same reason, if for no other, "no third party must be allowed to come between the patient and his physician in any medical relation," as the second principle states. In that relationship the patient has certain rights,

and among these is the right to choose a legally qualified physician as well as the right to the maintenance of a confidential relationship between himself and his physician. It is true that, under the present conditions of medical practice, the hospital is an indispensable factor; but it must also be understood that in the practice of today hospitals are but "expansions of the equipment of the physician," who alone can be considered "competent to use it in the delivery of (medical) service." For that reason the value of the hospitals "depends on their operation according to medical standards."

From these basic principles which are embodied in the first five of the ten-point policy of the American Medical Association there follow certain corollaries. The patient develops not only rights in his relationship to his physician but also obligations, and, therefore, he must be expected to bear the cost of medical service in so far as he can. Because, moreover, he must retain complete freedom in the choice of a physician, all of the qualified physicians of a given locality must be afforded equal opportunities, all other things being equal, to serve the individuals in that community. Only for the benefit of those who by reason of their low incomes are unable to meet costs of illness, should systems of relief be organized, and restrictions on treatment should be formulated and enforced only by the physicians themselves, who alone are able to understand the implications and the significance for a nation's health of restrictions on treatment.

This declaration of policy has elicited the warmest commendation and approval from ever so many sources. It is noteworthy that not only those who are eager to safeguard the traditional character of medical practice, but even others who have been just as eager to revolutionize medical practice are finding a measure of strength in this ten-point declaration of policy. The American Hospital Association (*Bulletin of the American Hospital Association*, July, 1934, page 71) announces that these principles "are in consonance with the principles which the



American Hospital Association and the hospital field have advocated." And then it goes on to say (page 72), "The pronouncement of this ten-point policy by the American Medical Association marks definite progress in constructive policies and forms a sound basis for the determination of procedures to guide the medical profession in both its professional and its economic relationships with the public which it serves."

Our own association has taken cognizance of the principles enunciated in the ten-point policy by adopting its resolution thirty-seven, dealing with the fundamental basis of medical service; number thirty-eight, dealing with the preeminence of the medical profession in medical practice; and thirty-nine, dealing with medical economics.

The resolution dealing with the fundamental basis of Medical Service proclaims the association's adherence "to the principle that medical and hospital practice must rest upon a personal relationship between the patient and physician." The chief reason on account of which our association is so deeply interested in the maintenance of this personal relationship is because only through its maintenance can the moral obligations implied in medical practice be fully safeguarded. When a moral obligation, especially one arising from justice, becomes diffuse and indefinite, it loses much of its urgency and rigor. Sanctions become difficult to enforce, and before long the advantages to society, which are supposedly guaranteed through the full recognition of and the insistence upon such a moral obligation, become evanescent.

It was further resolved at our convention (resolution thirty-eight) that "the medical profession must be recognized as preeminent in any methods of medical practice or service." It is this seemingly axiomatic statement which is explicitly or implicitly attacked by many of the programs for medical care which are today being advocated. In hospital administration, we have pledged ourselves through our resolution to regard "the rights, duties, and privileges of the medical profession . . . (as) directive and authoritative in hospital science and service." To be sure, ever so many other considerations enter into the management

and administration of hospitals besides medical considerations, but among all of these none may come into conflict with the accepted and traditional principles of medical practice unless the institution desires to sacrifice its character as a health-promoting and sickness-caring agency to the allegedly newer viewpoints.

Concerning medical economics, our association has again restated its position. According to our thirty-ninth resolution, "it deems a careful and cautious study of the methods of affording relief to the low income classes as worthy of the fullest encouragement." It repeats its warning, however, "against facile and ill-considered schemes which ignore acceptable basic principles." Our association calls attention to the dangers "to the nation's health and welfare arising out of any projected plans for group hospitalization, hospitalization insurance, and other similar schemes through which, in many cases, the commercial ambitions of individuals rather than the social and economic and hygienic good of national and other social groups are founded."

It can readily be seen how close to the principles enunciated by the American Medical Association are the resolutions adopted by our Nineteenth Annual Convention. We rejoice in this harmony of thought and principle which exists between our association and the association which represents organized medicine in the United States, for we cannot but recognize the physician in his ministrations to the sick as the one person predominately capable of giving guidance and direction in the countless services which the hospital as an institution renders to its patients. We hope and work and pray in order that the many vexed problems in hospital and medical economics may find expedient solution, but this much seems certain that no solution will be found satisfactory and adequate unless it safeguards the physician's place as the "Master in the House of Medicine."—A. M. S., S. J.

Excerpts from the resolutions unanimously adopted at the closing meeting of the Catholic Hospital Association of the United States and Canada at its Nineteenth Annual Convention, Cleveland Public Auditorium, Cleveland, Ohio, June 22, 1934:

*Be It Further Resolved*, That this Association again hereby proclaim its adherence to the principle that medical and hospital practice must rest upon a personal relationship between the patient and physician, which relationship implies moral obligations; that, therefore, under the usual conditions of medical practice the patient's right to choose a physician, qualified legally, professionally, and morally, must not be curtailed; that, therefore, this confidential relationship between patient and physician be deemed a necessary basis for good medical practice; and that, finally, our hospitals commit themselves to the formulation and administration of only such hospital policies as are consistent with the maintenance of this fundamental personal relationship.

*Be It Further Resolved*, That this Association hereby restate its adherence to the principle that the medical profession must be recognized as preeminent in any methods of medical practice and service; that, therefore, the medical profession must be accorded predominant influence in the medical activities of all institutions giving health and sickness care; and that, therefore, the hospital members of this Association commit themselves to the policy that the rights, duties, and privileges of the medical profession be considered directive and authoritative in hospital science and service.

*Be It Further Resolved*, That this Association, while it deems a careful and cautious study of the methods of affording relief to the low income classes as worthy of the fullest encouragement, yet hereby again repeat its warning previously issued on more than one occasion against facile and ill-considered schemes which ignore acceptable basic principles, and cannot, therefore, but be harmful to society; that it again call attention to the danger to the nation's health and welfare arising out of the many projected plans for group hospitalization, hospitalization insurance, and other similar schemes through which, in many cases, the commercial ambitions of individuals rather than the social and economic and hygienic good of national and other social groups are furthered.

## DEATHS

Dr. H. G. Pangle, Russellville; Vanderbilt University School of Medicine, 1896; aged 61; died September 6 following a short illness.

Dr. J. E. Jeter, Nashville; Vanderbilt University School of Medicine, 1904; aged 55; was killed September 7 in an automobile accident.

## WOMAN'S AUXILIARY

*President*-----Mrs. Willis Campbell  
Memphis  
*President-Elect*-----Mrs. R. G. Reaves  
Knoxville  
*Press and Publicity*-----Mrs. W. W. Wilkerson, Jr.  
Nashville

With all of us settled in our homes after our more or less occasional vacation wanderings—our children back in school noisily entering into the interests of a new year, and our husbands ready for the heavier work which the winter season may be expected to bring—we doctors' wives view with a bit of alarm our own full schedules which daily are growing fuller. But the current type of wife can no more be satisfied with keeping her interests within the boundaries of her home than she could be to have them exclusively on the outside. For she realizes that, in order to have the proper influence on her family, the complexity of modern living necessitates her taking an active part in the functions of her community. She must have her voice in her children's schools and church, and in the various women's clubs, in order to help direct the influence those organizations may have on her children. And for doctors' wives, this influence falls into very definite grooves. As we enter into another fall season of auxiliary work, we should renew our ambition to make every meeting count for us and for our communities, and should do all in our power to help toward that end.



MRS. R. N. HERBERT, PRESIDENT-ELECT OF  
THE WOMAN'S AUXILIARY TO THE  
A. M. A.

Tennessee is signally honored by the national auxiliary. At the national convention in Cleveland last June, Mrs. Rogers N. Herbert, of Nashville, was made president-elect of the Woman's Auxiliary to the American Medical Association. We wish to extend our congratulations to Mrs. Herbert for this outstanding honor. Mrs. J. D. Lester, of Nashville, has been appointed National Chairman of Hygeia.

NATIONAL AUXILIARY BOARD MEETING

Mrs. Willis Campbell, state president, as well as Mrs. Herbert and Mrs. Lester, attended the National Board Meeting in Chicago on September 22. They report a profitable and enthusiastic meeting. With three members of our state auxiliary on the national board, we feel that Tennessee is playing a very important part in our national auxiliary.

PERSONAL ITEMS

We wish to offer our sympathy to the Luttrell family and to Knox County Auxiliary because of the death of Mrs. Walter Luttrell, of Knoxville, a very valuable auxiliary member.

Born to Dr. and Mrs. W. F. Dorsey, of Knoxville, a son.

We send our congratulations to Dr. Henry K. Cunningham, of Knoxville, who was recently married.

We rejoice with Dr. and Mrs. Horace Gayden, of Nashville, over the recuperation of their daughters, Gayle and Annabel, from serious illness.

Born, on June 13, to Dr. and Mrs. Lynch Bennett, of Nashville, a daughter, Louise Barry.

Mrs. J. D. Lester has recovered from a recent operation.

STANDING COMMITTEES

COMMITTEE ON SCIENTIFIC WORK

H. H. Shoulders, Chairman, Nashville  
A. F. Cooper, Memphis  
W. J. Sheridan, Chattanooga  
Jesse C. Hill, Knoxville

COMMITTEE ON PUBLIC POLICY AND  
LEGISLATION

L. W. Edwards, Chairman, Nashville  
T. R. Ray, Shelbyville  
Robert Sullivan, Nashville  
Battle Malone, Memphis  
Tom R. Barry, Knoxville  
J. O. Manier, ex officio, Nashville  
H. H. Shoulders, ex officio, Nashville

COMMITTEE ON MEDICAL EDUCATION

O. S. Warr, Chairman, Memphis  
W. H. Witt, Nashville  
Franklin Bogart, Chattanooga  
Oliver Hill, Knoxville

ADVISORY COMMITTEE TO THE WOMAN'S  
AUXILIARY

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Percy Wood, Memphis  
Eugene Abercrombie, Knoxville

LIAISON COMMITTEE

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Tom Mitchell, Memphis (four years)  
J. L. Raulston, Knoxville (three years)  
W. C. Dixon, Chairman, Nashville (two years)  
W. P. Wood, Knoxville (one year)

STATE TUBERCULOSIS HOSPITAL  
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A. M. Patterson, Chattanooga  
J. A. Crisler, Jr., Memphis  
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Howard King, Nashville  
E. T. West, Johnson City  
J. A. McCulloch, Maryville

## LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. J. O. Manier, Nashville.  
 Vice President for East Tennessee—Dr. W. B. Campbell, Cleveland.  
 Vice President for Middle Tennessee—Dr. J. K. Blackburn, Pulaski.  
 Vice President for West Tennessee—Dr. G. H. Berryhill, Jackson.  
 Secretary—Editor—Dr. H. H. Shoulders.  
 Assistant Secretary—Editor—Dr. W. M. Hardy.

## TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.  
 Dr. Ralph Monger, Medical Arts Building, Knoxville.  
 Dr. W. L. Williamson, 915 Madison Avenue, Memphis.  
 Dr. H. B. Everett, 2541 Broad Street, Memphis.  
 Dr. E. R. Zemp, Walnut Street, Knoxville.

## COUNCILORS

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 Sixth District—Dr. L. W. Edwards, Nashville.  
 Seventh District—Dr. C. D. Walton, Mt. Pleasant.  
 Eighth District—Dr. J. R. Thompson, Jackson.  
 Ninth District—Dr. E. H. Baird, Dyersburg.  
 Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.  
 Dr. H. H. Shoulders, Nashville; Middle Tennessee.  
 Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.  
 Dr. M. M. Cullom, Nashville; Middle Tennessee.  
 Dr. E. C. Ellett, Memphis; West Tennessee.

## OFFICERS OF COUNTY MEDICAL SOCIETIES FOR THE YEAR 1934

County	President	Vice President	Secretary-Treasurer
Anderson	J. M. Cox, Coal Creek	Thomas Jennings, Clinton	J. S. Hall, Clinton
Bedford	S. S. Moody, Shelbyville	W. T. Sharp, Farmington	Alfred Farrar, Shelbyville
Blount	E. W. Griffin, Townsend	C. C. Vinsant, Maryville	H. A. Calloway, Maryville
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Coke			J. E. Hampton, Newport
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Dyer, Lake, and Crockett	W. S. Alexander, Ridgely	B. G. Marr, Dyersburg (Dyer) R. E. Hellen, Ridgely, (Lake)	J. Paul Baird, Dyersburg
Fayette, Hardeman			B. F. McNulty, Bolivar
Fentress	I. R. Storie, Jamestown		J. P. Sloan, Jamestown
Gibson	Featherston Douglas, Dyer	Paul D. Jones	F. L. Roberts, Trenton
Giles	John Morris, Pulaski	Joe B. Wright, Lynnville	T. F. Booth, Pulaski
Greene	C. P. Fox, Greeneville	L. E. Dyer, Greeneville	M. A. Blanton, Mosheim
Grundy	D. H. Bryan, Monteagle	T. F. Taylor, Monteagle	U. B. Bowden, Pelham
Hamblen	D. R. Roach, Morristown		R. A. Purvis, Morristown
Hamilton	Franklin B. Bogart, Chattanooga	James L. Bibb, Chattanooga	Wm. J. Sheridan, Chattanooga
Hardin, Lawrence, Lewis, Perry, and Wayne	J. W. Danley, Lawrenceburg		C. C. Stockard, Lawrenceburg
Haywood	R. T. Keeton, Brownsville	Glenn T. Scott, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Elroy Scruggs, Paris	R. G. Fish, Paris
Hickman	L. F. Pritchard, Only	C. V. Stevenson, Centerville	W. K. Edwards, Centerville
Humphreys			W. W. Slayden, Waverly
Jackson	J. D. Quarles, Whitleyville	R. C. Gaw, Gainesboro	F. B. Clark, Gainesboro
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Lincoln	J. E. Sloan, Boons Hill		J. M. McWilliams, Fayetteville
Loudon			J. Gilbert Eblen, Lenoir City
Macon	D. D. Howser, Lafayette		J. Y. Freeman, Lafayette
Madison	Kelly Smythe, Bemis	Swann Burrus, Jackson	S. M. Herron, Jackson
Maury	Robert Pillow, Jr., Columbia	C. O. Fowler, Springhill	
		Watt Keiser, Columbia	C. D. Walton, Mt. Pleasant
McMinn	W. R. Arrants, Athens	D. P. Brendle, Englewood	R. W. Epperson, Athens
McNairy	John R. Smith, Selmer	G. B. Curry, Selmer	H. C. Sanders, Selmer
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Obion	W. B. Harrison, Union City	Har Glover, Union City	Frank Kimzey, Union City
Overton			A. B. Qualls, Livingston
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Scott			D. M. Woodward, Huntsville
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White	R. E. Lee Smith, Doyle	E. B. Clark, Sparta	A. F. Richards, Sparta
Williamson	H. C. Stewart, Franklin	Dan German, Jr., Franklin	K. S. Howlett, Franklin
Wilson	S. B. McFarland, Lebanon	R. L. Witherington, Lebanon	J. R. Bone, Lebanon



## REPORTS OF LOCAL AUXILIARIES

Knox County—Mrs. H. E. Christenberry, President.

At a board meeting in August, it was decided to dispense with a September meeting, as so many of the auxiliary members were not in town.

Davidson County—Mrs. B. F. Byrd, President.

In June the Davidson County Auxiliary had a unique and amazingly successful party for the husbands of its members. It was a swimming-barbecue-dancing party held at the summer camp of Dr. and Mrs. W. W. Wilkerson, Jr. Stimulated by the excellent cooking of their wives, and by the appealing music of a jug orchestra, about fifty Nashville doctors temporarily forgot there was such a thing as a stethoscope or a scalpel, and demonstrated how one really should dance to mountain music. Mrs. Byrd, Mrs. W. O. Floyd, chairman of hospitality, and their committees, felt amply repaid for all the necessary hard work of preparation. Incidentally, by charging fifty cents a person, over twenty dollars was added to the local treasury.

## NEWS NOTES AND COMMENTS

The State Council of Health adopted the following policy concerning the qualifications of local registrars of vital statistics. Doctors will please take note of this:

1. In the selection of local registrars, the guiding principle should be to obtain persons who are efficient, reliable, of good reputation, and whose residence will be most accessible and convenient to the physicians and undertakers who generally serve the particular registration district.

2. The following specific qualifications should be met by those recommended for appointment as local registrar:

- (a) Ability to read understandingly and to write legibly.
- (b) Valid reasons tending to show *permanency* of residence.
- (c) Residence at or near geographical center of district, but keeping in

mind accessibility and convenience to physicians and undertakers.

- (d) Written indorsement of the majority of licensed physicians practicing in the registration district.

The Radiological Society of North America will hold its next annual meeting at the Hotel Peabody, Memphis, Tenn., December 3-7, 1934. The medical profession is cordially invited to attend. Further information can be obtained by addressing the secretary-treasurer, Dr. Donald S. Childs, 607 Medical Arts Building, Syracuse, N. Y.

Dr. Homer Reese, of Gallatin, has reopened his office following his recovery from illness of more than two years' duration.

Announcement is made that the American Urological Association has granted permission for the establishment of a "South-eastern Branch" in the territory composed of the following states—Alabama, Georgia, Florida, Louisiana, North Carolina, South Carolina, and Tennessee.

Some time ago, Dr. Edwin W. Cocke purchased the Hayes Sanatorium near Memphis. The building has been remodeled. In addition to hospital facilities, there will be a clinic for consultation and outpatients.

The hospital will be opened on November 1.

## MEDICAL SOCIETIES

*Anderson County:*

The Anderson County Medical Society met in Clinton on October 1. Dr. S. R. Miller, of Knoxville, discussed "Medicine in the New Deal."

The physicians attending the meeting were: J. Sam Taylor, H. D. Hicks, J. S. Hall, J. M. Cox, Thomas Jennings, W. B. Barton, and J. T. Hayes.

*Cumberland, Overton, Jackson, Putnam, White Counties:*

The Five-County Medical Society met in

Livingston on September 20. A paper, entitled "Iritis," was read by Dr. Claude Tubbs, of Sparta.

A paper, entitled "Hemorrhage in Obstetrics," was read by Dr. Fred Terry, of Cookeville.

Twenty-four doctors were present, and almost everyone took part in the discussion of these papers.

The next meeting will be at Gainesboro the third Thursday in November.

#### *Davidson County:*

September 11 — "The Recognition and Management of Common Types of Skin Diseases," by Drs. C. M. Hamilton and E. E. Brown.

September 18—"The Differential Diagnosis of Acute Abdominal Conditions," by Drs. H. H. Shoulders and Murray B. Davis.

September 25—"A New Diagnostic and Prognostic Method in Acute Otitis Media and Mastoiditis," by Drs. W. G. Kennon and Robert Sullivan.

October 2—"The Factors Conditioning the Transmission of Syphilis by Blood Transfusion," by Drs. Hugh Morgan and C. M. Hamilton.

#### *Dyer, Lake, and Crockett Counties:*

On October 3, Dr. J. O. Manier, president of the Tennessee State Medical Association, spoke on "The Program for Reorganization of the State Health Department," and Dr. H. H. Shoulders, secretary-editor of the Tennessee State Medical Association, addressed the society on "State Medicine." Dr. L. C. Sanders, of Memphis, read a paper on "Some Phases of Colon Diseases."

A large number of members was present, and much interest was shown in the papers of the evening.

#### *Gibson County:*

The September meeting was addressed by Dr. Oliver, of Chicago, who discussed "Skin Diseases," and Dr. Aldrich, of Chicago, whose subject was "Diseases of Children."

#### *Hamilton County:*

Programs for the next month are given

below. The society meets at its home in the Medical Arts Building every Thursday night. Visiting physicians are invited.

October 18—"Hematuria," by Dr. H. H. Hampton. "Appendicitis," by Dr. Franklin Johnson.

October 25—"Neurocirculatory Asthenia," by Dr. J. B. Haskins. "Edema in Small Infants," by Dr. H. D. Long.

November 1—"Caesarean Section," by Dr. H. P. Hewitt. "Prenatal Care," by Dr. Cleo Parcell.

November 8—"Important Surgical Considerations of the Stomach," by Dr. W. D. L. Record.

November 15—"Diseases of the Rectum," by Dr. John L. Cooley. "Intestinal Intoxication," by Dr. O. G. Hughes.

#### *Hardin, Lawrence, Lewis, Wayne and Perry:*

On September 25, eighteen doctors were present to hear a most interesting program. The meeting was held in Hohenwald. The program was as follows:

Motion Pictures — "Breech Extraction with Forceps," "Miscellaneous Pediatric Cases," and "Physical Examination of Infants," by Mr. T. F. Moore, of Mead Johnson & Co.

"Foot Deformities," by Dr. J. J. Ashby, Nashville. Discussion opened by Dr. W. K. Edwards, Centerville.

"Clinical Interpretation and Significance of the Irregularities of the Heart," by Dr. Wm. R. Cate, Nashville. Discussion opened by Dr. J. V. Hughes, Savannah.

#### *Knox County:*

September 25—"The Problem of Hemorrhage in Obstetrics," by Dr. J. J. Greer.

October 2—No meeting on account of the East Tennessee meeting in Maryville.

The following dates have been assigned to the essayists named:

October 9—"Program on Tuberculosis," by Dr. Herbert Acuff.

October 16—Dr. A. H. Lancaster.

October 23—Dr. R. G. Reaves.

October 30—Dr. R. M. Young.



November 6—Dr. Leon Bromberg, of Chicago.

November 13—Dr. W. W. Potter.

#### *Robertson County:*

The Robertson County Medical Society met September 18 at the Springfield High School, where Dr. W. B. Dye entertained with his annual squirrel stew.

During the meeting, Dr. R. C. Derivaux and Dr. Horton Casparis, of Nashville, read interesting papers. Dr. J. R. Connell, of Adams, president of the society, presided.

Besides members of the local society, about twenty-five visitors from Montgomery, Davidson, and Sumner Counties and Logan County, Kentucky, attended the meeting.

#### *Washington County:*

The November meeting will be held on the first day of the month. The society will be the guests of the Veterans' Administration at the Soldiers' Home.

#### *Wilson County:*

On September 6, the Wilson County Medical Society had as its guest Dr. Tinsley H. Harrison, of Nashville, who gave a most interesting and instructive talk on some of the "Acute Cardia Emergencies."

On November 8, Dr. J. S. Campbell will discuss "Menorrhagia."

### OTHER MEDICAL SOCIETIES

The newly-organized Black Patch Medical Society held its first meeting in Clarksville, September 11. Three talks on "Diseases of the Heart" were heard.

Drs. O. N. Bryan, J. O. Manier, and William R. Cate, of Nashville, were speakers.

The Middle Tennessee Medical Association will meet at Lawrenceburg, November 8, 9. A good program is being arranged. The Lawrenceburg doctors are planning to

make every visitor remember the meeting. Make your plans now to attend.

The East Tennessee Medical Association held what seems to be almost a record session in Maryville, October 2. The attendance was good, and interesting papers were presented. One remarkable thing about the conference was that every speaker was present to give his paper, and was there on time.

Dr. E. L. Ellis was elected president; Dr. Harold H. Long of Johnson City, vice-president for upper East Tennessee and Dr. R. C. Kimbrough, Madisonville, vice-president for lower East Tennessee. Dr. H. A. Callaway of Maryville, was re-elected secretary-treasurer.

The meetings were held in the parlors of the M. E. Church, South. At night the visitors, directed by the local physicians, went to Montvale Springs Hotel where they were served a typical Montvale Springs dinner. After the dinner Dr. Battle Malone, of Memphis, the guest of honor, delivered an address.

### ABSTRACTS OF CURRENT LITERATURE

#### **ANESTHESIA**

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

New and Improved Spinal Narcosis as Developed by German Physicians. John F. Ford, M.D. Texas State Journal of Medicine. April, 1934.

Spinal anesthesia. Although there has been great reduction in mortality, the complications are too numerous to say that it is a safe type of anesthesia. During the summer of 1932, the German surgeons began to use an epidural type of spinal narcosis, and the author was able to observe about 150 cases. It was a great improvement over subarachnoid spinal block, in that the anesthetic properties are not lost, and the complications are infrequent and not dangerous.

The epidural space is external to the dura mater and completely surrounds it, extending from the seventh cervical vertebra above to the third piece of the sacrum below. The anesthetic drug does not enter the subarachnoid space and does not come in contact with the spinal cord and cause paralysis of the superficial vasomotor fibers. The phrenic

nerves and the respiratory centers in the medulla are not involved, because the anesthetic cannot pass higher than the seventh cervical vertebra. The anesthesia lasts from one and one-half to two hours.

The injection is made between the twelfth thoracic and the first lumbar vertebra—a total of 50 cc. of 1 per cent solution of novocain is used. Ten cc. is injected, and, in fifteen minutes after observing the areas of anesthesia, 20 cc. is injected, and, after a lapse of five minutes, the remaining 20 cc. is injected. Narcosis is effected by blocking the sensory nerves after they have left the dural sheath.

## DERMATOLOGY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

Recent Changes in Dermatologic Diagnosis. Resume of 1,112,050 Published Cases. Anton W. Sohrweide, M.D., New York, N. Y. Archives of Dermatology and Syphilology. August, 1934.

The author feels that dermatology has kept pace with general medical knowledge, and that there has been a direct enlargement of the scope of dermatology, brought about by the complex cutaneous reactions resulting from the constantly increasing flood of patented cosmetics, laxative preparations, and new chemical agents.

There was no selection of cases; the ten most common dermatological diagnoses in the clinic of Stuyvesant Square Hospital from 1928 to 1933 are compared with the published findings of previous investigations. Syphilis was purposely omitted. From the time of Crocker's report in 1903, eczema ranked first place (or 26.3) until 1928, when it dropped to second place (or 15.9). In 1903, impetigo ranked second place (or 9.61), but from that time until 1928 acne ranked second place, psoriasis third place, dermatitis venenata fourth place, scabies fifth place, urticaria sixth place, pruritis seventh place, tinea eighth place, seborrhea ninth place, and impetigo tenth place. From 1928 to 1933, dermatitis venenata ranked first place (or 17.9), eczema second place (or 15.9), acne third place (or 10.7), tinea fourth place (or 10.2), seborrhea fifth place, impetigo sixth place, scabies seventh place, psoriasis eighth place, urticaria ninth place, and alopecia tenth place.

## INTERNAL MEDICINE

By R. B. WOOD, M.D.  
Medical Arts Building, Knoxville

Studies in Diabetes Mellitus. By Elliott P. Joslin, M.D., Louis I. Dublin, M.D., and Herberts M. Marks. American Journal of Medical Science. April, 1934.

Consideration of the available material on incidence of diabetes and the factors underlying variations in its frequency reveals these significant facts.

The number of known diabetics in this country is probably between 300,000 and 400,000. This estimate takes into account current diabetes mortality, the duration of life of diabetes, and the incidence of diabetes recorded in the various sickness surveys.

A large increase in the incidence of diabetes is indicated by comparison of earlier surveys with recent ones, and also by hospital statistics.

The incidence of diabetes abroad seems to be lower than in this country. Here the case incidence is about two and one-half to three per thousand, compared to one and one-half to two and one-half in the various countries of western Europe. The number of diabetics in Germany is estimated at 100,000 to 150,000, and in England 50,000 to 75,000. Estimates for the other large countries cannot be made, because data necessary for computing them are not available.

Mortality statistics show that two and one-half million persons (2.08 per cent of the present population) may be expected ultimately to succumb to the disease. The chances of eventually dying from diabetes are nearly twice as high for females as for males, and are higher for white persons than colored persons.

Diabetes is more prevalent and seems to be increasing faster in urban areas than in the rural ones.

In this country, the northeastern states have a much higher diabetes death rate than those in the south. Average rates prevail in the middle west and on the Pacific Coast. This variation is greater in the rural than in the urban population.

In Europe, diabetes rates are relatively high in the north and west and low in the south.

The Teutonic peoples suffer more frequently from diabetes than the Latins. The data on Czechoslovakia, if typical, indicate a low diabetes rate among the Slavic peoples. National and racial tendencies in this country conform largely to those abroad, except among the Irish, who, in Ireland, have a very low diabetes rate, but a high rate in this country.

Recent studies of mortality in New York bring out clearly the excessive frequency of diabetes in Jews and confirm earlier clinical observations. This finding does not seem to apply to young Jews. Among the older ones, the incidence is probably one and one-half to two times the average.

Diabetes is more frequent in the higher than in the lower social classes.

The employing and professional groups tend to have high diabetes rates. This is also true of those who sell or serve food and drink. Diabetes is least frequently found in persons engaging in occupations requiring hard manual labor.

Long sustained wars result in decreases in the diabetes rate, largely as a consequence of the reduction of food supplies available to civilians. For



a variety of reasons, the effect of economic crises is not altogether clear-cut, but, in any case, it is less direct and less influential than the effect of war conditions.

Sugar consumption in itself is not an important factor in the diabetes rate, nor in the increasing incidence of the disease.

In the judgment of the authors, the several external factors influencing the incidence of diabetes, which are the subject of the present article, depend upon a very few basic forces.

**Carbon Monoxide Poisoning.** By Harrison S. Martland, M.D. Jour. A. M. A. Vol. 103, No 9. New York City.

From 1928 to 1932, in New York City, there were 5,289 deaths from asphyxiation by carbon monoxide; and, in the belief of the writer, fully one-half are due to accidents, carelessness, and lack of quick, competent resuscitation methods.

There are three main sources of danger in civil life: Illuminating gas, exhaust gas, and coal gas. Over 90 per cent of the deaths in New York were due to illumination gas. The body of a person dying of carbon monoxide gas presents certain characteristics. Probably the most important is the bright pink color of the skin and post-mortem lividity. It may only be confused with those dying of cyanide or from exposure to extreme cold. This color change is noted in the internal organs, even to the production of a pink foam noted on section of the lungs.

In those recovering, the carbon monoxide is eliminated within a few hours. Some are total recoveries, others may present some form of mental disturbance, a few will improve, later to lapse into unconsciousness and die within one to three days.

At autopsy, a degeneration similar to thrombotic softening is noted, chiefly in the pallidus, subcortical white matter, and the putamen. These changes are due to the disastrous effect of prolonged anoxemia. In spite of the pallidal distribution, Parkinsonian syndromes have not been noted following carbon monoxide asphyxia.

Samples of blood in all cases should be quantitatively examined for carboxyhemoglobin. Though it is stated by Haldane and Henderson that a saturation of about 20 to 30 per cent is necessary for the production of symptoms, Gettler notes it is from 18 to 20 per cent, and that death may occur from 20 to 65 per cent.

Treatment is based on the restoration of an ample supply of oxygen and a normal amount of carbon dioxide. This is done by supplying carbon dioxide, 7 to 10 per cent in oxygen. The injection of methylene blue is harmful, and blood transfusions, intravenous medications, and respiratory stimulants are unnecessary.

## OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

**Subconjunctival Iron Deposits After Adrenin Injections.** Trygve Gunderson. American Journal of Ophthalmology. September, 1934.

The black deposits remaining at the site of subconjunctival injections of adrenin consist of complex organic salts formed from the reduction of ferric chloride by the adrenin. Iron is dissolved from the hypodermic needles by the strongly acid "adrenalin hydrochloride," and is present as small amounts of ferric chloride. This is immediately precipitated by the strong reducing action of adrenin.

Obviation of the conjunctival deposits can be accomplished in any one of several ways:

1. By the use of platinum or gold needles. This is the simplest method. Dissolution from these metals is practically negligible.

2. By the use of adrenin pledgets kept under the lid for a few minutes, instead of subconjunctival injections. These have practically as pronounced a mydriatic effect as injected adrenin, but may be contraindicated in some cases.

3. By allowing the adrenin to come in contact with the needle for as short a time as possible, if only steel needles are available. A clean needle full of normal salt solution may be first introduced through the conjunctiva, after which the syringe is attached to it and the solution quickly injected.

## PEDIATRICS

By JOHN M. LEE, M.D.  
Doctors Building, Nashville

**Gasoline and Kerosene Poisoning in Children.** John A. Nunn, M.D., and Frank M. Martin, M.D. Jour. A. M. A. August, 18, 1934.

Seven cases of gasoline poisoning and sixty-five cases of kerosene poisoning are reported admitted to hospital for treatment in a period of two years. The ages were 10 months to 2 years. The temperature varied from 97 to 106. Pulse and respiration rates were increased. Blood and urine showed no characteristic changes.

Those patients who only drank these substances showed restlessness, incoordination, cyanosis, vomiting, and loose stools. Then followed a few hours of depression and recovery. Such cases responded to stimulation, emptying the stomach, and catharsis.

A much graver clinical picture developed in those who aspirated these petroleum products into the trachea and lung. This produced cough, moist rales, and rapidly developing pneumonitis. There were also observed cyanosis, rapid and feeble respiration, rapid and weak pulse, restlessness, coma, and convulsions as a result of involvement of the

central nervous system; the respiratory center, motor areas, and vagus center being principally affected.

Apparently the toxic fractions of these substances reach the vital centers much more rapidly and in larger amounts when absorption takes place in the lungs. Absorption is much slower in the gastrointestinal tract, and the liver may have a detoxifying effect. Waring demonstrated that 100 cc. of kerosene administered to dogs by stomach tube produced only slight temporary effect, while 10 cc. injected into the trachea caused death in from six to eight hours.

The prognosis is in direct ratio to the amount of these hydrocarbons that enters the lungs. If the patient survives several hours, he recovers completely. In this series, the mortality was 9.2 per cent in the kerosene cases and 28 per cent in the gasoline cases. There are no complications or sequelae in recovered cases. The irritating effects in the lungs and gastrointestinal tract disappear in two or three days.

There is no antidote for this kind of poisoning. The treatment consists of removing the poison as completely as possible, by emesis preferably. The struggle resulting from gastric lavage may cause the patient to aspirate these substances into the lung and add to the seriousness of the condition. In cyanotic cases, 95 per cent oxygen and 5 per cent carbon dioxide by inhalation seemed helpful. Atropine sulphate and caffeine sodiobenzoate hypodermically were used as stimulants.

Eight case histories illustrate the article.

## SURGERY—GENERAL AND ABDOMINAL

By ROBIN F. MASON, M.D., F.A.C.S.  
735 Medical Arts Building, Memphis

Acute Diverticulitis of the Cecum; Right-Sided Symptoms with Diverticulitis of the Sigmoid. Dr. Golder L. McWhorter. Chicago Number, The Surgical Clinics of North America. August, 1934. Vol. 14, No. 4.

Diverticulitis practically always involves the sigmoid or descending colon with symptoms in the left lower quadrant.

The author hereby reports two cases of cecal diverticulitis, simulating acute appendicitis, and two other cases also presenting right-sided symptoms which were "probably" diverticulitis of sigmoid.

*Case 1.*—Boy, 19 years old, presented for operation forty-eight hours after attack of colicky pain, beginning around umbilicus. After seven hours, pain localized in right lower quadrant. No nausea, vomiting, or bowel symptoms. Had had two prior attacks not so severe. White cell count 10,000, temperature 99.8, pulse 66.

Through muscle splitting incision, a long, free

appendix was exposed. A hard mass the size of a lemon was noted near base of appendix on cecum.

Mass was covered by a Jackson membrane, which, when pushed aside, disclosed a small gangrenous diverticulum containing a fecalith. Diverticulum and appendix were removed, and abdomen closed without drainage. Recovery.

*Case 2.*—C. C. Colicky pains in abdomen for two weeks, localizing in right lower quadrant two days before presenting self to surgeon. Vomiting and severe pain the last two days.

Through right rectus incision, a moderately congested appendix was exposed. Two cm. from base of appendix, a hard mass covered with fat and membrane was noted. Upon dissecting mass out, it proved to be a diverticulum filled with fecalith.

Diverticulum and appendix were removed, and patient recovered and remained well.

*Case 3.*—Moderate pain in entire lower abdomen for one week. Twenty-four hours before admission, pain was so great had to go to bed. No previous attacks.

Physical examination revealed marked tenderness and rigidity over McBurney's point. Under conservative treatment, symptoms subsided in one week. X-rays taken after recovery divulged diverticula of sigmoid and descending colon. The sigmoid lay close to right side of pelvis, and diverticulitis of it was probably the cause of the attack.

*Case 4.*—Symptoms began three weeks ago with pain in right lower quadrant and vomiting. Examination revealed a large swelling in right lower quadrant, the mass extending down under Poupart's ligament.

White blood cell count, 17,800.

Under local anesthesia, an incision was made over abscess in thigh, and a large amount of pus evacuated. Two or three days later, fecal matter was discharging from the incision. This continued for ten weeks and then closed. X-rays taken later disclosed diverticula in descending colon and sigmoid. No diverticula were found in cecum.

The writer then discusses the frequency of diverticula in general.

He states that, in the large bowel, the descending colon and the sigmoid are the most frequent sites for same.

The writer states that, while perforation in diverticulitis occurs just like it does in appendicitis, localization is more likely to occur in the former. Treatment in the acute stages is like that for appendicitis, though less urgent. In the chronic type, malignancy is to be suspected.

Whenever, at operation for acute appendicitis, the appendix doesn't seem sufficiently diseased to warrant the symptoms, the abdomen should be searched for further pathology, especially the terminal ileum.



Fractures of the Maxillary Bones. Walter M. Morgan, D.D.S., Nashville, Tenn. From the Journal of the American Dental Association. October, 1934.

Dr. Morgan presents a very interesting sketch of the development of various types of splints for maintaining reduction in fractures of the maxillary bones and discusses the various advantages and disadvantages of each. The present contribution is the result of Dr. Morgan's dissatisfaction, after fifteen years' experience, with the splints in common use. He very modestly remarks that, while the splint presented is the result of his own efforts, it will be found to be a composite of principles presented by former writers. The originality of the author is attested, however, by a statement by Dr. Thomas L. Gilmer, Chicago, to whom the splint was submitted in April, 1931, who says: "No one, so far as I know, has made such a splint, and I think you may present it without any fear of infringement." A thorough search of the literature bears out this statement.

The splint utilizes the arch bar of Gilmer, which is a modification of the Hammond splint. To this are soldered the tubes of Marshall, and into these tubes are inserted the wings of Gunning. The remaining portion of the splint consists of palatal bars and occlusal rests, such as have long been used by dentists in restorative surgery.

Dr. Morgan describes in detail the technique of construction of the splints, each one of which has to be made accurately to fit the case under treatment. Impressions of the teeth are taken and the splints adjusted to the casts.

The splint requires that the labial arch bar be adjusted to the labial and buccal surfaces of the upper teeth and held in place for interdental wires. The palatal bars and occlusal rests are located in either interocclusal spaces or where teeth previously have been lost. The wings of the splint are connected to a head cap by small gauged stainless steel wire. The author points out that the palatal bars should be so adjusted as not to press upon the mucous membrane and cause pressure necrosis.

Dr. Morgan reports four cases of fracture of the maxilla, in which his splint was used with excellent result. He points out the following advantages of the splint:

1. It has no great bulk.
2. It can be kept clean.
3. It can be adapted to the most difficult type of case where there are only a few teeth present.
4. It can be used in cases having fractures of both maxilla and mandible.
5. The occlusion is in constant view.

The writer of this review had the pleasure of referring Dr. Morgan's second case to him, and an opportunity was afforded of watching the progress and end results. The patient was comfortable at

all times and was able to keep his mouth clean. The end result was excellent.

The conclusion is inescapable that Dr. Morgan has made a valuable contribution to the treatment of fractures of the maxilla, and accumulated experience will prove that his work marks a great advance.

[Reprints of the original article may be had by writing Dr. Walter Morgan, Doctors Building, Nashville, Tenn.—Dr. N. S. Shoffner.]

## UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
Medical Building, Knoxville

The Adequacy of Treatment in the Control of Syphilis. Udo J. Wile. Jour. A. M. A. Vol. 103, No. 9, Page 648.

This problem is approached from a public health standpoint, and two main objects are sought: First, adequate treatment of existing cases; second, prevention of new cases. The prevention of syphilis as a public health measure is perhaps the most difficult problem of all.

Wonderful advances were made in this direction of its prevention during the past war, but similar measures cannot be taken during peace time.

He asks the question, "Is the profession better prepared today to treat syphilis, and prevent late sequelae?"

He does not believe that the advance in treatment has kept pace with our better knowledge of the clinical, biologic, and pathologic aspect of the disease. The treatment is still in a state of flux. Each year brings forward some new drug as a cure, all of which are subsequently discarded for older remedies. The newer drugs that have proven of distinct value are the arsenicals, bismuth, and fever therapy. Among all advances, one thing stands out unchanged through centuries, "the continuous use of a heavy metal."

He thinks that our present-day method is not the last word in treatment, and may be entirely changed in the near future.

He believes that we are definitely able to prevent late accidents much oftener than in the past. Late cardiovascular, neurosyphilitic lesions and hereditary syphilis are in a large part preventable.

In an analysis of the results of five syphilitic clinics, compiled by the public health department and in the author's personal experience, it is definitely shown that inadequate treatment is responsible for late accidents. It must be admitted, however, that a small percentage of syphilitics with late accidents escape diagnosis and treatment because of the unfortunate tendency of syphilis to occasionally occur early as an occult infection. The

chancre itself is not always so evident, and the secondaries may be so evanescent as to escape both the attention of the physician and patient. Periodic health examinations, including a Wassermann, are the answer to this.

Adequate treatment is that amount of treatment that is necessary over a long period of time to protect the average patient. From twenty to thirty arsphenamines and forty to sixty bismuths have been shown to confer a high degree of protec-

tion in a large group of early cases against late accidents.

The damage to vital tissue takes place in the septic stage, and not in late stages. The spirochaete provokes a low-grade infection and progresses very slowly. The energetic treatment in the invasive period is then the watchword.

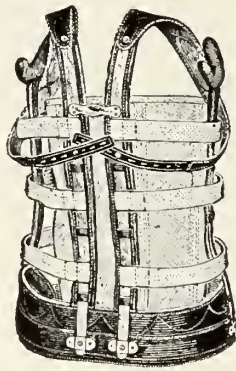
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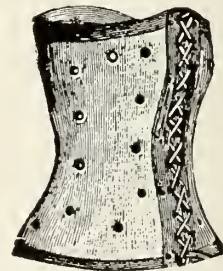
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### THE RELATION OF THE CELLULAR STRUCTURE OF BRAIN TUMORS TO THERAPY\*

COBB PILCHER, M.D.,\*\* Nashville

IN any field of medical science, improvements in methods of treatment rest invariably upon the shoulders of increasing knowledge of the structural and functional changes that occur as the result of disease. Thus, in neurosurgery, one of the youngest fields of therapy, the rapid strides that have been made in recent years toward successful treatment have resulted to a considerable extent from the great increase in our knowledge of the underlying pathologic condition. This fact is particularly applicable to brain tumors, and especially to the gliomas, which constitute about 41 per cent of all intracranial tumors.

It was not many years ago that the term glioma invariably conjured up a mental picture of an infiltrating, malignant neoplasm, eating away the substance of the brain, operation upon which, even if technically successful, could only be expected to produce a temporary amelioration of symptoms. A far different outlook has come to us, however, with the knowledge that nearly half the gliomas are benign, slowly-growing neoplasms, many of them readily amenable to complete removal and permanent cure.

This change in our knowledge, very slow in its early stages, has come more and more rapidly in recent years. Virchow(1), in 1846, first recognized the existence of the neuroglia and called the tumors arising

from it "gliomas," but it was not until the early part of the present century that neurologists began to recognize that there were many types of gliomas, with widely variable clinical behaviors. Beginning with the paper of Tooth(2), in 1912, several attempts were made to classify them—Greenfield(3), Roussy, L'Hermitte, and Cornil(4)—but these were of little value until the development of the special metallic staining methods by Ramon y Cajal(5) and his brilliant pupils, del Rio Hortega and Achucarro. The use of these methods soon showed that the various gliomas were composed of very different cell types, which corresponded with the various embryonic stages in the developing neuroglia, and, in 1926, there appeared the monograph of Bailey and Cushing(6), which proposed the histogenetic classification now generally accepted.

In a similar manner, the other types of intracranial tumors have come to be well-defined, both histologically and clinically. The great group now called meningiomas—Cushing(7)—or meningeal fibroblastomas—Penfield(8)—has grown out of a maze of apparently variable neoplasms and confusing terminology, which formerly included such terms as *meningo-epithelioma*, *tumeurs cancéreuses des meninges*, *cylindroma*, *psammoma*, *tumeurs fibro-plastiques*, *Sarkome der Dura mater*, *dural endothelioma*, and many others. The acoustic tumors have been recognized as a separate type(9). The pituitary adenomas(10) are now known to

\*Read before the Nashville Academy of Medicine, October 3, 1933.

\*\*From the Department of Surgery, Vanderbilt University School of Medicine, Nashville, Tenn.



be of two types†: the chromophile, which cause acromegaly, and the chromophobe, which cause hypopituitarism. The pathological diagnosis of tuberculoma, made on over 30 per cent of the tumors reviewed by Starr(11), in 1903, was made in only 1.4 per cent of Cushing's series of tumors studied by modern methods(12). Similarly, gumma of the brain is now known to be a rare disease(13).

Hand in hand with our increased knowledge of the structure of these various tumors has come knowledge of the clinical differences they present, and, hence, of the way in which they may best be treated. We have learned, too, to differentiate many of them by their gross appearance at the operating table, or, if this is impossible, practically all can be diagnosed by frozen section. There follows a brief account of the principal therapeutic considerations presented by the common types of tumors:

1. The *astrocytoma* is a benign, slowly-growing glioma, which occurs with greatest frequency in the cerebral hemispheres in adults and in the cerebellum in children. In the latter location, it is very likely to be cystic(14), with a small mural nodule in the wall of the cyst. This nodule is the only neoplastic portion of the tumor, and its removal results in permanent cure. Furthermore, the cyst can usually be opened and the nodule excised without damage to the surrounding brain. Even in those cases in which complete excision is impracticable (on account of size or location), partial excision will often give them freedom from symptoms for many years, on account of their exceedingly slow rate of growth.

2. The *glioblastoma* is the malignant, infiltrating tumor of the cerebral hemispheres of adults. Its gross appearance is typical. It is reddish-brown in color, grows diffusely into the surrounding tissue, and is apt to show areas of degeneration or hemorrhage(15). When it occurs far forward in the frontal lobe or in the tip of the right temporal lobe (both so-called "silent areas"), complete excision of the lobe is sometimes indicated. When it occurs in

more vital areas, however, it is well for the surgeon to recognize it and at most only attempt to relieve pressure temporarily, for these tumors recur with great rapidity.

3. The *medulloblastoma* occurs most frequently in the mid-cerebellar region in childhood(16). It is composed of primitive, undifferentiated neuro-epithelial cells, and grows very rapidly. However, its malignancy is offset to some extent by the fact that, of all the gliomas, it responds best to X-ray therapy(17). When such a tumor is exposed, therefore, it is usually best to remove just enough of it to relieve the obstruction of the fourth ventricle and to follow the operation with massive doses of X-rays. This is in contrast with the astrocytomas in the same location, which do not respond to X-ray therapy and should be radically extirpated. Another characteristic of the medulloblastoma, rarely seen in the other gliomas, is its tendency to form distant metastases in other parts of the central nervous system (especially in the meninges of the spinal cord and surface of the cerebral hemispheres). The extension probably occurs by direct migration of tumor cells in the cerebrospinal fluid pathways(16). The X-ray therapy in these cases, therefore, should include the entire cerebrospinal axis.

4. The *meningeal fibroblastoma* is a benign, encapsulated tumor which compresses, but does not invade, the brain. It arises from the arachnoidal villi, and hence occurs with greatest frequency along the great dural sinuses(7). The tumors vary considerably in their rapidity of growth, but all are readily enucleable, and recurrence is rare, if a radical extirpation is performed. These tumors are also remarkable for the changes which they produce in the adjacent bone(7), which may vary from simple pressure atrophy to marked hyperostosis or involvement of the bone in the tumor. Such changes are often recognizable in X-ray films of the skull.

5. The *perineurial fibroblastoma*, which arises most frequently from the sheath of the eighth cranial nerve(9) (acoustic neuroma), is easily recognized by its thick capsule and the firm, yellow tissue of the tumor itself. It grows very slowly, and, on

†A third type, the basophile adenomas (cf. Cushing: Bull. J. H. H., 1932, 50, 137) never attains a sufficient size to be of significance surgically.

this account, it is usually considered wiser to do an intracapsular removal rather than risk the damage to the brain stem, which so frequently occurs, if a total extirpation is attempted.

6. The *pituitary adenoma* may be composed, as stated previously, of either the chromophobe or chromophile cells of the hypophysis. The differentiation can readily be made from the symptoms (acromegaly with chromophile adenomas, hypopituitarism with chromophobe adenomas), and is of importance in regard to treatment, because the chromophile tumors appear to be more susceptible to radiation. An adequate measurement of the benefit derived from this treatment is available in the characteristic bitemporal visual field defect, as well as in the visual acuity.

From the foregoing consideration of these common types of intracranial tumors, and from studies of less common types as well—cf. Pilcher(18)—it is apparent how great can be the value to the neurosurgeon of the recognition of the exact pathologic type of lesion with which he is dealing. This value lies not only in assisting him to determine the wisest course to pursue at operation, but in enabling him to give an accurate prognosis. It is usually possible to predict, with reasonable accuracy, the probability of permanent cure or of recurrence, and, in the latter case, the probable time that will elapse before symptoms return. The ability to do this may be of great importance to, as well as alleviate the uncertainty and worry of, the patient and his relatives.

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## FETAL CONDITIONS FOR THE TERMINATION OF LABOR\*

C. W. FRIBERG, M.D., F.A.C.S., Johnson City

ACCORDING to the records of vital statistics, one out of every twenty-five babies born in this country is a stillborn. A very large number of these are preventable and I will try to give a number of reasons which call for the termination of labor, if possible.

During labor, the only evidence of a satisfactory oxygen supply is auscultation of the fetal heart. Its rate should be regular and from 120 to 140 per minute. If this is the case, its action is unembarrassed, and the uteroplacental circulation is taken for granted. The slight drop of rate during contraction and the corresponding increase noted in the interval between are physiological adjustments necessary to assure an adequate supply of oxygenated blood.

When the fetal heart rate is 100 or less per minute, asphyxia must be considered(1). The vagus center is stimulated by lack of oxygen, and excess of carbonic acid in the fetal blood may be temporarily present immediately after labor pains. This may be the result of pressure upon the umbilical cord, and the termination of labor should be considered. This is indicated only when the retardation of the fetal heart is continuous, or as it appears after a number of pains, or persists throughout an extended period between pains.

It is known that weak, irregular and arrhythmic fetal heart sounds may be present in the case of anencephalic or other monsters, in which the cerebral and spinal centers are so ill developed that this regulating action of the heart muscle is lost(2).

Continuous acceleration of the fetal heart beats to 160 per minute or more, without any particular cause, such as fever of the mother, is another sign of asphyxiation(3). The rhythm is significant in that, if reduplication, dropping of beats, or other irregularities of rhythm occur, it indicates distress(4). No characteristic cardiac symp-

toms, pathognomonic for an existing intracranial trauma in the fetus, are known(5). Indeed it is almost typical for the fatally injured fetus that heart action will continue though respiratory activity has never begun(6).

Baumm, from a large series of careful observations of parturient women, combined with an autopsy of stillborn infants, concluded that a fetal tachycardia appearing without a preliminary bradycardia, in the course of protracted labor of an afebrile woman, is pathognomonic for a threatened intracranial hemorrhage(7). He believes that, when this tachycardia preceded the bradycardia, the hemorrhage had already occurred. The reversed sequence of a tachycardia, followed by a bradycardia, in his opinion, probably is the expression of a beginning asphyxiation. However, he found fetal death may occur suddenly during labor, recognized by the sudden cessation of all heart sounds without any preliminary changes in the rate.

Sachs maintains that danger to the fetus is clearly shown by a slowing of the fetal heart below 100, or by repeated changes of the rate within wide limits, even if it never slows below 100. He emphatically states that a fetal heart rate up to 160 must not be taken as an indication for interference, and positively does not justify difficult forceps extraction, which in itself implies great danger to the fetus(8). The only acceptable indication for immediate interference, in his opinion, can be found in a bradycardia below 100, persisting during the intervals between a few consecutive uterine contractions.

A slowing of heartbeats in the second stage of labor, states Bartram, might mean an accumulation of carbon dioxide(9). The interference with the required oxygen supply to the fetus might be due to abnormal conditions either in the placenta or in the cord circulation, or indicate, as well, an existing intracranial hypertension. If the hypertension is caused by an intracranial

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hemorrhage, operative delivery obviously will fail to bring help; if due solely to excessive moulding, relief from the dangerous outside pressure certainly would be desirable, but, unfortunately, application of the forceps and extraction will actually augment this pressure, and the operation result in more harm than good. An arrhythmia discovered during labor, it must be recalled, might have existed for some time before labor started. Holtemann, quoting five such observations from literature, reported one more made by himself (10). He considered this arrhythmia as characteristic of the large, overcarried fetus, and, fearful of approaching death, he preferred a Cæsarean section. Schroeder takes exception to such radicalism, and describes a case in which the irregularity of the fetal heart was first noticed seventeen days before labor (11). Rihl mentions three cases in which such an arrhythmia persisted after birth, while two cases, representing typical instances of auricular extrasystoles, and in the third a sinus abradycardia, were diagnosed later by an electrocardiograph examination (12).

Loudness of the fetal heartbeats is of little diagnostic value. The absence of apparent fetal movements is more often due to the descent of the presenting part in the pelvis. On the other hand, sudden increase in fetal movements late in labor, especially late in labor accompanied by altered heart rate, is suggestive of asphyxia.

We are well acquainted with various, chiefly mechanical, factors, such as compression of cord, ablatio-placenta, placenta prævia, prolapsed cord, etc., which can disturb the fetoplacental circulation and induce fetal suffocation. Thus the problem of operative termination of labor in the interest of seemingly threatened fetus takes on quite a different aspect. In this case, we are facing several evident facts and some difficult questions. In cases in which intrauterine asphyxiation is actually caused by an insufficient oxygen supply, only prompt removal of the fetus from the uterine cavity would seem to offer any hope for success. If, on the other hand, the signs of a beginning asphyxiation are due to some cerebral trauma, any methods of artificial quick delivery that would add to the already

existing traumatization can only reduce the chances for the fetus.

Stahnke states that intrapartum fetal asphyxia may be influenced without undertaking operative procedures (13). Two methods are available for this: 1. Anesthesia, chloroform or ether, may be used, and only a small quantity is necessary. These anesthetics are effective when the asphyxia is due to too strong uterine contractions or to the compression of the fetal skull. 2. Cardiac stimulants administered to the mother. Intravenous injections of digalen are particularly indicated when the mother has heart disease.

Goodall says escaping meconium should not be taken as a sign of fetal distress (14). It should be merely an evidence of how common fetal distress occurs, and how frequently the cause of asphyxia is removed before fatal results ensue. This knowledge should make us put the proper interpretation upon the escape of meconium, namely, that it means only the fetus has suffered, but should not be taken as a sign that the child is in distress. Escaping meconium should teach us to determine, firstly, that the child is still alive, and, secondly, to realize that fetal cardiac action, judged by its rapidity or its slowness, by its arrhythmia or its variations in intensity, is the only reliable evidence that fetal distress is actually taking place. In the narrow pelvis, with the presenting part blocking the outlet, the fetus cannot expel meconium, and, in some cases of sudden intrauterine death, they do not expel any meconium.

Long labor does not necessarily mean long continued suction effect, because this effect really develops only in the second stage of labor. To watch unconcernedly a head pressing through the pelvic outlet against an unyielding perineum surely is inviting disaster, as Greenwood states (15). On the other hand, any one familiar with the mechanism of intracranial traumatization will fully agree with Esch, "If excessive compression of the head is considered responsible for the signs of fetal asphyxia, then any other compression, as by a forceps delivery, will be detrimental to the fetus" (16). Gamper reminds us of the question, Is intracranial damage more often due to the



failure to apply forceps or the result of their application (17)?

The fetal conditions for the termination of labor may appear at any period of delivery, from the beginning of labor to the latter part of the second stage (18). If it occurs in the first stage, it requires a serious and technically difficult operation; in the second stage, delivery may be terminated by simple extraction. It is necessary to evaluate carefully the different signs of asphyxia and to weight them carefully as against the dangers of intervention. In short, it should be the purpose of the obstetrician to prevent intrauterine death of the fetus by an intervention which will not endanger the life of the mother, and, if possible, produce no severe injury nor infection. The type of operation depends on the stage in which the labor has progressed.

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#### DISCUSSION

DR. ANDREW SMITH (Knoxville): I have been very much interested in Dr. Friberg's paper, because he has been writing upon such a very unusual subject. I agree with Dr. Friberg that our infant mortality should be lower. It is important for us to conserve and lower our infant mortality in accordance with our skill. There should be a greater degree of cooperation between the expectant mother and the obstetrician in order to do this. In other words, the public must be educated along these lines, and the plane of the practicing obstetrician must be raised, and he must be thought of in terms of a man of accomplishment rather than the neighborhood crank.

I must confess that I would be a little afraid to interrupt pregnancy every time I found the pulse below 100 or above 160. If I were better educated, and knew more of this, I might trust myself a little farther than I am in the habit of doing.

I should like to ask the essayist if he would interrupt pregnancy at whatever stage he found a heartbeat of 100 or below or 160 or above?

I fully agree with the essayist that the condition known as abruptio placenta is a clear indication for the interruption of pregnancy, but it has been my experience that pregnancy is to be interrupted in the interest of the mother rather than in the interest of the child. In this case, you don't find the typified symptoms of the slow or fast heartbeat, because you don't hear any, and, in cases where I have been unable to find a heartbeat at all, I have been able to interrupt pregnancy and deliver a live baby.

I believe that, in every instance where pregnancy would be interrupted where placenta praevia exists, it is interrupted in the interest of the mother always, and not in the interest of the child.

DR. H. H. RING (Fort Oglethorpe, Ga.): I think that this paper has been very interesting, and especially the discussion.

I have a few statistics on operative deliveries, gathered from the hospitals of Atlanta by E. D. Colvin, and published in the July issue of *The American Journal of Obstetrics and Gynecology*. This series of cases covers 220 abdominal sections, of which 81.8 per cent were performed while the fetal membranes were intact, yet there was a maternal mortality of 5.5 per cent.

In this series of 220 sections, 225 babies were born. Of this number, 16.4 per cent died. This is from the classical type of Cesarean section, which should carry the lowest fetal mortality of any operation which we might do.

We surely would not wish, with a maternal mortality of 5.5 per cent, to subject every mother to Cesarean section, whose infant's heart rate was a little too slow or a bit too fast.

In my own obstetric practice, and perhaps I am a little careless, I do not pay a great deal of attention to the heart tones. However, I do listen to them occasionally, and should it be slow, fast, ir-

regular, or gone. I note the fact and inform some responsible member of the family that the child may or may not be born dead.

According to statistics, approximately 35 per cent of the infants born dead, or who die shortly after birth, die as a result of intracranial hemorrhage. This can be shown by autopsy. Forceps delivery, version and extraction, or, in fact, any operation which we might attempt, would surely increase rather than decrease our fetal mortality, when the classical section carries a maternal mortality of 5.5 per cent and a fetal death rate of 16.4 per cent.

DR. C. W. FRIBERG (closing): With regard to Dr. Smith's question of fetal heart rate of

below 100 and above 160, I think the best thing to do in your careful examination of the mother is to see what condition she is in, how far she has progressed in delivery.

I mean by this paper not to try to be radical, but to do Cæsarean when it is necessary. I don't believe in unnecessary Cæsarean section.

Manual dilatation means manual laceration, and in your forceps delivery you have bad results in most cases, to the fetus as well as to the mother.

In some cases you are unable to get the fetal heart sounds. Those are rare.

I may say to the doctor from Atlanta, I think that is a very good record on Cæsareans, but you do have a higher mortality on the babies in Cæsarean operation than a person would think.



## HYDATID MOLE—REPORT OF A CASE\*

K. S. HOWLETT, M.D., Franklin

ONE can, and often does, learn a more valuable lesson from failure than success. So, too, physicians might confer a greater benefit upon their respective medical societies by sometimes reporting errors in diagnosis and treatment in contrast with the usual custom of presenting only successful cases, which, as we are so uniformly told, "make uneventful recoveries."

In accord with this idea, I have asked the privilege of reporting the following case, illustrating one of my many mistakes, and one from which I derived a valuable and, I hope, lasting lesson.

This patient came to my office on February 23, 1934, and the following history was obtained: Female, white, 29 years of age, married, borne five children (the youngest living being two years old), all pregnancies and labors normal. Her menstruation had reappeared at the usual interval, after the last birth, and had been regular each month until December, 1933, at which time she missed.

The flow came again in January, but was irregular, rather too free, and some clots were passed at night. At this time, too, she was nauseated, noticed a "knot" in her side, and had some swelling of her feet. She consulted her family physician, Dr. H. E. Patey, of Lyles, Tennessee, who, after careful examination, pronounced her pregnant with threatened abortion, and ordered her to bed. She was not able to remain in bed on account of her household duties, but remained under his care for three weeks. (Her own account of this period was vague and contradictory, but Dr. Patey later sent me a full and clarifying report of his observations, which I shall incorporate in this paper.)

She then came to her mother's, near Franklin, where the cares of children and household duties could be taken off her

shoulders, and where she could, at least, be kept in bed.

On my first examination, the most obvious symptom and the one to which she and her mother called my attention was the enormous swelling of the lower limbs. They were edematous, pitting deeply on pressure, and numerous blebs had formed, many of which had broken, leaving a weeping surface which kept her clothes constantly wet. The thighs and buttocks were markedly edematous, and there was a large broken blister over the sacrum, from which the serum was oozing freely. The swelling and edema extended up to the waist. The abdomen was distended beyond the size of even a full-time pregnancy, and I was sure that I got a distinct fluid wave upon tapping the opposite side. The abdomen was dull, even flat, on percussion over the entire area, and there seemed no shifting of the dullness upon changing to the upright position. She was quite pale and anemic, the hemoglobin 60, the pulse was 130 or above when seated, and she complained of dyspnea on exertion. Blood pressure 110 over 80, and urine normal, though she reported it scanty.

Unfortunately and inexcusably, I did not make a vaginal examination. It has been said that no physical examination is complete until the examiner introduces his finger into the rectum. Certainly, no examination of a childbearing woman is complete until a thorough pelvic investigation has been made. From experience and observation, I am convinced that many more errors are made from incomplete or careless examination than from ignorance or other causes, and that this one break, viz., neglect to make a complete vaginal and rectal examination, is one of the most frequent.

However, the picture presented was typical of cardiac dropsy with hypertrophy of liver and ascites; the abdomen too much distended to be accounted for by a three months' pregnancy; no outline of a fetus could be felt; the sensation brought out by

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palpation and percussion of the abdomen was that of a cavity, containing fluid, and I was further led astray by the history of menstrual flow in January.

Full doses of digitalis, saline purges, and salt-free diet were prescribed, and the patient directed to report after two days. Except for a message that the stomach did not retain any of the medicine, nothing was heard from the patient until February 28, five days after her first visit, when she again came to my office. All symptoms were practically the same, certainly no better; and she complained of acute pain high up in the right hypochondrium, which was quite tender on pressure.

Some good protecting deity induced me to make a vaginal examination before puncturing the abdomen with a trocar, which I was prepared to do.

The vulva was very much swollen, so much so that it was quite difficult to reach the os. Bimanual palpation demonstrated clearly that it was an enlarged uterus that filled the abdomen. The finger entered the os without much force, and the uterus appeared to contain a soft, yielding, fluctuating mass. Even with this, I must confess I was at sea as to what I had to contend with. I had never, in my practice of 53 years, seen, to recognize, a case of hydatid mole. I had not at this time heard of any of my fellow practitioners having had one. Two years before this I had seen and treated a woman with hydramnios, the fluid accumulating rapidly at the seventh month. She also had excessive hyperemesis, with rapid loss of flesh, and I was inclined to suspect the same condition in this patient.

She was given an opiate and sent home with an appointment to visit her in the morning. After she left, I looked up the textbook literature on hydramnios, and found in the same chapter description of hydatid mole. The description conformed so clearly to the symptoms presented by my patient that the diagnosis was then easy. My case was a textbook case with no described symptoms absent, and the only one present in my patient, not described in the textbook, was the excessive edema, which is often present in even normal pregnancy.

I was not surprised to receive a call dur-

ing the night with the message that the patient was flooding. Upon my arrival I found that she had flooded profusely and was much shocked. The os admitted the finger easily. And knowing what to look for, I detected the typical grape-like vesicles, some of which came out in my hand. There was still some hemorrhage, which I controlled by promptly and snugly packing the os with gauze. The os was thick and a little rigid and there were no pains or uterine contraction. I gave morphine and atropine and one-half cc. pituitrin. The pulse slowed down, the sweating stopped, and there was perceptible though not satisfactory reaction. I saw her five hours later, when there were slight labor pains, and the pack had come away. The os was dilated and filled with the protruding mole. I gave 1 cc. of pituitrin in two doses twenty minutes apart, and with the slightest uterine contractions the mole was expelled en masse. The expulsion was accompanied by the discharge of a large amount of a thin blood-tinged fluid, like the discharge of amniotic fluid at childbirth. The mass was twelve or fourteen inches in diameter and filled a gallon bucket to overflowing. In the center was the ovum, about the size and appearance of a chicken gizzard laid open. No fetus or remnant of one could be found. The uterus contracted promptly and firmly, with irregular outline, suggesting a possible fibroid.

As soon as possible one-half cc. pituitrin and morphine and atropine were given, and the patient seemed to react favorably. I saw her twenty-four hours later and found her comfortable and cheerful. She conversed quietly and with optimism about her condition. The edema had subsided rapidly just as after normal delivery where much swelling is present. She had had no further hemorrhage, only slight wasting, and the uterus seemed firmly contracted. However, she had been unable to retain things, even water, on the stomach. She was quite pale and the pulse exceedingly rapid and weak, and she had had one or two smothering spells. I again gave morphine and atropine hypodermically, and directed that the room be kept free from visitors and confusion in



order that the patient be quiet and have all the rest possible.

I had asked one of our county health nurses to visit her in the afternoon, and left morphine and atropine for her to administer, and left orders for no further efforts at medication by the mouth. The nurse could not get to her on account of a swollen creek, and six hours after my morning visit I was called back with the message that she was having an alarming sinking spell. There was considerable delay on account of the distance to the telephone, and the stream which I had to cross on a swinging wire foot bridge (reached with some difficulty) to get to a buggy on the opposite side, in which I was transported to the home, only to find that the patient had just died. The mother stated that she had had no further hemorrhage or vomiting and had taken some nourishment and seemed to be all right, until about two hours before her death, when she seemingly fainted. She recovered consciousness, but continued quite weak with an anxious face, and died suddenly with only a gasp, just as I arrived, having lived just thirty hours after the expulsion of the mass.

Dr. Patey's report, which he kindly sent me in response to my request, was enlightening and would have been very helpful had I had it at the time of the first visit. I am appending the substance thereof:

He states that he had attended her in 1929, at the birth of a premature (7-month) baby, which lived only a few days. Later he delivered a baby at full term. On both occasions she failed to stay in bed as he directed, but was up and doing hard work, including the washing, in a very few days. About the first of January she had a lot of sickness in her family, measles and pneumonia, and was under a terrible strain physically and mentally, besides living in a crowded house under the worst possible environment. The latter part of January, one month from the time she had missed her period, she placed herself under his care. Her first complaint was nausea. She was vomiting practically everything taken on her stomach. She noticed a "knot" in her side, which she said was first on one side and then on the other. Upon examination,

Dr. Patey found the mass lying to one side and about the size of a two and a half or three months' pregnancy. She had some pain in lower abdomen and was flowing considerably, passing clots at night. He made a diagnosis of pregnancy with threatened abortion, put her to bed and upon sedative treatment. She had frequent, painful urination with strangury, but the urine was negative chemically. There was some swelling with edema of the feet, which extended rapidly up to the body. B. P. normal, and there was no evidence of a heart lesion, though the pulse was very rapid. She was running some fever and had considerable cough.

Dr. Patey had her under observation near one month, and during that time the uterus increased rapidly in size, being about the size of a seventh-month pregnancy at the end of this time. It appeared to be "too high in the abdomen and not in the right proportion in circumference" for a pregnant uterus. She continued to bleed at irregular intervals, and Dr. Patey suspected an extra-uterine and advised hospitalization, which, for lack of funds and other reasons, the patient declined.

Hydatid mole is an affection of the chorion and develops from a proliferation and edema of the epithelial covering of the chorionic villi. The cause seems to lie in the ovum itself, as in cases of twin pregnancy, one ovum may develop a mole while the other remains normal. It is a disease of the impregnated ovum and probably only follows the death or destruction of the embryo. Usually no remnant of the fetus can be found, and the cause may lie in the dead embryo. The frequency with which it is accompanied or rather followed by chorio-epithelioma indicates a close affinity between the two, and quite a large per cent (some authors place it at 50 per cent) show tendency to malignancy.

It is a rare condition; Madam Boivin estimating one in 20,000 pregnancies, other observers up to one in 2,400; others, who give a higher percentage, evidently include all cases of degenerative changes following fetal or embryonic death.

The clinical history is rather characteristic, and where one is looking for it, the

diagnosis should be made with reasonable certainty from the clinical findings. Certainly in as typical a case as this one the diagnosis should be easy. Too rapid enlargement of the uterus during the first three months of pregnancy, accompanied by uterine bleeding, is presumptive evidence of hydatid mole, and the detection of the characteristic grape-like vesicles confirms the suspicion.

The Aschheim-Zondek test has been suggested as an aid where biological laboratory facilities are available. It is said that the reaction can be obtained with one-twelfth the amount of urine, in hydatid mole, as required in ordinary pregnancy. In the *Journal of the A. M. A.*, of September 2, 1933, M. Y. Dabney and associates of Birmingham, Ala., report a case in which the Aschheim reaction was positive after forty-eight hours from the use of a very small amount (only 0.4 cc.) of urine. From this a majority diagnosed hydatid mole, but as this opinion was not concurred in by a minority, operation was not performed. She continued to bleed and finally delivered herself of a five and one-half month dead fetus, rather bringing disrepute on this test.

This test has been used, too, after the discharge of the mole to determine if chorioepithelioma is threatened.

In the case I am reporting, the marked loss of flesh, the myocardial degeneration, and the rapid and excessive development of the growth would suggest malignancy.

Had the patient not passed out so soon, it would have been interesting to watch for chorioepithelioma. Also whether or not the patient would have staged a cardiac comeback with the disappearance of the swelling and edema.

Hydatid mole is always a serious condition and, once the diagnosis is made, the uterus should be emptied at once. As to the method of doing this, it should be remembered that the uterine wall is very much thinned and easily punctured, and caution should be exercised in the use of instruments. Probably the safest plan is to pack the cervix and wait for the uterus to empty itself.

Dabney, in the article referred to, suggests subsequent radiation and possibly removal of the uterus. This would seem a little radical in view of the fact that a number of these patients recover and have normal pregnancies afterwards.

He also makes the following statement: "In pregnancy, of course, rest and waiting are the prescribed treatment for bleeding." Bleeding (even slight) in pregnancy is always a danger signal, and where the bleeding is continuous or recurrent, it would seem safest to empty the uterus at once, just as with hydatid mole.

### DISCUSSION

DR. W. K. VANCE (Bristol): This condition, hydatidiform mole, or, as it is abbreviated, hydatid mole, fortunately is not a very common condition. It is first mentioned in the literature by Aetius of Amida, who first wrote about it in the sixth century. Since then, there has been quite a good deal of study, particularly histologically, on the subject, and we have acquired some more knowledge in the meantime, but still the etiology of the condition is obscure.

The prevalence of it seems to be in question. How often you run across the cases depends, of course, on how active the obstetrical clinic happens to be. The mere fact that the average man does not see it very often is unmistakable evidence that it isn't so common.

It is usually found in multiparae, between the ages of twenty-five and forty. Why some should have these abnormalities and others not, we have never been able to determine. It is a well recognized fact that some women show a greater tendency to develop abnormal pregnancies.

I recall one case that I delivered on two occasions. With the first pregnancy she had a hemicephalic, and on the second a hydrocephalic, the only two children she had. Why she should do that, and why other women should develop these abnormalities, there is really no biological reason to explain.

Histologically, we have in the mole a colloid or a mucoid degeneration of the syncytial cell of the chorionic villi, and there is also an overgrowth of the Langhans cells. These extend quite deeply, sometimes, along the blood channels into the uterus, and even progress to the point of perforating the uterus at times. These cells sometimes metastasize, and they are very frequently found in the vulva and also in the vaginal mucosa.

In hydatid mole, the vesicles may cover the whole chorionic villi, or they may occupy only the basal or placental portion. If the whole chorionic villi are covered, it usually develops much earlier, probably before the third month, and naturally leads to destruction of the fetus. Those are the



cases in which you find no fetus present. If it affects the basal part, the pregnancy may go on, and there are cases reported where the child has gone to full term even in the presence of a mole.

This case that Dr. Howlett mentioned is pretty interesting from several viewpoints. It is the characteristic case in that it presented all symptoms that are usually mentioned. Unfortunately, the doctor got hold of a case that did not terminate like the average case terminates, for the simple reason that he had a lot of complications that really put him under a great handicap. Being the good fellow that he is, he kind of reproaches himself for not going ahead and making a vaginal examination. We are all guilty of that dereliction, and it is a very sad commentary on us that we don't go ahead and do those things as often as we should.

The cause of this woman's death seems to have been cardiac, but the question comes in our minds, Was that a cardiac death, or could that have been one of those cases where there was a weakening of the uterine wall, the perforation of which the labor caused, with a slow hemorrhage, and she died more from a hemorrhage than from a cardiac condition? The low hemoglobin, the rapid pulse, and all of those symptoms show that she undoubtedly had some cardiac complication.

It is a little bit early for her to have a death from a malignant condition. That is one thing that we must consider in these moles. Some of them develop malignancy, and the malignancy is one of the most dangerous of malignant conditions that we come in contact with, because these cells are growing in close connection and right in direct contact with the blood stream, and consequently very rapidly metastasize. They have found metastases, as I have mentioned, of the chorionic villi cells, in the vulva, and also in the vaginal mucosa. They have extirpated some of those and examined them microscopically and determined that they are chorioepitheliomata, but some of those patients get well on extirpating the local tumor, and it looks as though there must be an intermediate form in this condition whereby some of the cells histologically look like chorioepithelioma and in reality haven't reached that stage of malignancy that usually characterizes that condition.

I do not see, under the circumstances, how the outcome could have been changed in any way in Dr. Howlett's case, even by an earlier diagnosis. Naturally, the logical thing to do is to empty the uterus as soon as possible after the diagnosis is made, and as safely and gently as possible, for, as he says, the uterus is very friable, and it is a very simple matter to perforate it by the use of instruments, and permitting that patient to go ahead and deliver herself, I think, is the most sensible, and certainly the safest, way to handle that particular type of case.

The differential diagnosis of the pregnant state presenting symptoms that this case had is quite difficult. There are some half dozen things that

you have to consider in the differential diagnosis. The first would be threatened abortion. Threatened abortion, of course, is a condition that comes on earlier, or, rather, the uterus would not present the size that this one did with a pregnancy at that stage of development.

Another thing to consider is a normal pregnancy with an attempted abortion where there is no previous suppression in menstruation. I have at the present time a patient who is three months pregnant; she has menstruated with every period; she has one child, and she stated that she menstruated regularly every month during her previous pregnancy. If we go on the question of a suppression of menstruation in determining the stage of pregnancy, it isn't always reliable.

This woman, of course, could have had an attempted abortion or a premature delivery with a normal pregnancy of a much greater advancement, say about six or seven months.

An ectopic pregnancy has to be considered, but an ectopic pregnancy is a much earlier condition, coming on about six weeks after the missed period, and the mass in the abdomen could not have been an intrauterine mass, at that stage, with an ectopic pregnancy.

A premature separation has to be considered, but this woman did not have the board-like rigidity of the abdomen and the uterine wall usual in that condition.

Hydramnios comes on later in pregnancy, consequently, at three months, we could pretty well rule that out, from the size of the uterus.

The only thing we have left to consider very forcibly is the hydatid mole. The diagnosis of that, of course, is made by the size of the uterus at three months, as it was in this case, which is out of proportion, and it is one of the cardinal symptoms of a mole; another is the hemorrhage, and another is the tumor masses of cysts that they pass, and the so-called currant-juice bloody discharge that accompanies it.

This is a very interesting case. It is a thing that we can all get a lot of good out of, and if we will follow Dr. Howlett's suggestion, and do more pelvic examinations on these patients, we will have a much better knowledge of what is going on on the inside.

DR. W. T. BLACK (Memphis): These cases of hydatidiform mole are always of interest. Here we have the vesicular formation of the chorionic villi. In any woman whose uterus is out of proportion to the time of her pregnancy we should think of a hydatidiform mole or of hydramnios. If we have hemorrhages occurring during the pregnancy we think of a hydatidiform mole.

I recently saw a case that was about three and a half months pregnant, in which the uterus extended up above the umbilicus, which grew rapidly in a very few days, and she was having hemorrhages. You get a typical picture like the above case oftentimes with hydatidiform mole.

I don't believe the occurrence of hydatidiform mole is rare. I investigated this subject pretty fully about a year ago, and out of 80,000 pregnancies in the statistics, there occurred about one hydatidiform mole in 980 pregnancies. In the last 20,000 pregnancies in Memphis, hydatidiform mole occurred once in 1,280 cases.

About 25 per cent of pregnant women abort, and the placentas are not carefully examined afterwards; therefore, are often overlooked. Consequently, we find that a lot of these women had hydatidiform mole when we didn't realize it, because the placentas were not properly examined afterwards.

The principal thing is how you are going to treat these cases of hydatidiform mole. We have different views on this subject. Pheneuf, Anspach, and other men I could mention, advise doing a complete hysterectomy. Graves and others advise the use of radium after hydatidiform moles, so as to preclude any chance of the development of a chorioepithelioma. I have seen several of these cases, and I never have had but one case that had a chorioepithelioma. I know several cases are living ten, fifteen, twenty years, that had these moles that never developed any form of malignancy. While chorioepithelioma is preceded by hydatidiform mole in forty-seven per cent of the cases, nevertheless, something less than one per cent of hydatidiform moles are followed by chorioepithelioma. As these cases occur in young women, they should be permitted, I think, by carefully watching them for at least a year, to have the opportunity of having a child. I think that the treatment should be the emptying of the uterus and watchful waiting for several months afterward. If they develop symptoms of uterine bleeding soon after deliveries, then have an Aschheim-Zondek test made and see if they have any of the placenta or secundines retained. If any of the particles of pregnancy are left you will get a positive test.

A diagnostic curettage will usually clear up the condition, whether it is due to some retained secundines or whether she has a developing chorioepithelioma. If she has a chorioepithelioma, that can be readily demonstrated by the pathologist. In chorioepithelioma you have an anaplasia of the cells of Langhans and the syncytial cells, sometimes found side by side or intermingling, one on top of the other, which is abnormal. A diagnosis from the scraping of a curettage is readily made, then X-ray, radium, or a complete hysterectomy will relieve these cases.

As the doctor preceding me said, some of them are not so malignant. We have the chorioadenoma, which is not so malignant as the chorioepithelioma; the chorioepithelioma is very malignant and metastasizes rapidly, and sometimes the first indication you have is metastasis to the lung and hemoptysis.

Normally during pregnancy we have syncytial cells in the blood stream; they are found in the lung and in different parts of the body normally,

but nature seems to form some lytic substance whereby it takes care of the syncytial cells and as quickly as the child dies or is expelled, nature destroys these syncytial cells.

If for any reason a chorioepithelioma develops, nature is not so good to the patient. These metastasize and the Langhans and syncytial cells will continue to grow and there may be malignancy develop in other parts of the body by way of metastasis.

I would say that in hydatidiform mole the conservative treatment should be used. De Lee and other men follow the conservative plan and watch the patient carefully. Have your Aschheim-Zondek test made if the case shows up with uterine hemorrhage afterwards, and in that way you will be able to make a diagnosis of chorioepithelioma in time usually to cure your patient.

DR. W. R. ARRANTS (Athens): In general practice I have had two of these cases. The Lord was better to me than he seemed to be to Dr. Howlett, and I got the cases through.

The first was a primipara in her early twenties. I saw her when she first missed her menstrual period. I was called back when she should have been between two and three months. She had begun to waste. At that time she had an abdominal enlargement that should have agreed with about a six months' pregnancy, and was flooding pretty freely. The cervix was so dilated that I could get in manually and clean the uterus out, and she had no trouble going on to an uneventful convalescence, and in something like six months she had a recurrence. She called me back this time and said she had missed between two and three months, and at that time she was about the size of a six or seven months' pregnancy. She had been nauseated to some extent. At that time I was like Dr. Howlett; I had found out that these things should be regarded with respect; that they are serious conditions. I made no examination at all. I packed the woman and brought her to Erlanger Hospital, and after a microscopic examination of the tissue that she was passing, we decided to do a hysterectomy. Dr. Haskins did a panhysterectomy on her and removed the whole mass, the uterus, tubes and everything, all shot up in one mass.

The laboratory man said it wasn't a malignant affair, and after four years she has had no recurrence and has done fine.

The next case was a multipara. I saw her only after she had begun to flood. She was supposed to be three months pregnant and was as large as a six to seven months' pregnancy. She had bled almost to exsanguination. I managed to clean her out manually. I had no time to do anything else. Her Wassermann was four plus. I don't know whether that had any bearing on the condition at all, but she passed from under my observation and I have not seen her since.

She gave me a history of having had a previous condition some several years before and having



passed what was probably a mole, and she had borne one or two healthy children following that.

As the doctor has said, a good percentage of these do become malignant, and that should be borne in mind. The one thing that we should look out for is the rapid enlargement of the uterus out of all proportion to the time that they are thought to be pregnant. That is one of the things that should put us on our guard.

I enjoyed Dr. Howlett's paper very much. I don't think he has any reason to reproach himself, because probably conditions other than the mole took the woman away, or so it seems to me.

DR. JOHN S. CAYCE (Nashville): I have enjoyed the doctor's paper, particularly as I have just recently passed through an experience with a patient of that type. The particular thing, though, that I wish to suggest is that we should not look for a typical case all the time. The one that I have just seen is a woman who was diagnosed as having pernicious vomiting of pregnancy, and at the time I saw her last Saturday she was supposed to have been four and a half months pregnant. She had been in the hospital for five or six weeks, vomiting incessantly, had lost about fifty pounds, had been transfused three or four times, and was given two quarts of saline under the skin each day, and yet she continued to vomit. There was no discharge whatsoever, and the uterus was not enlarged further than a four and a half months' pregnancy would have been.

We are inclined many times to allow these patients who vomit to go too far with their vomiting because we have a certain thing within us that prevents us from wanting to do a therapeutic abortion, and that was the trouble with us in this case. We let her rock along, hoping all the time, day after day, that the woman would quit vomiting, and she was steadily getting worse.

We finally decided that we would interrupt her pregnancy, and the first thing we encountered when we went to interrupt the pregnancy was a great deal of bleeding, slight dilatation, and a mass like hydatid mole was passed. It was not enormous in size; it was only about the size of a placenta of a four and a half or five months' pregnancy, but was distinctly a mole. No evidence of any fetus could be found.

It is true that these cases characteristically destroy the fetus. I believe that in all probability if we were not quite so prone to insist that these women who vomit and keep vomiting all the time are trying to put something over on us and would regard them as sick women, particularly when they have had two or three transfusions, as this woman had, we would save a great deal of suffering and perhaps more lives than we do.

This woman no doubt had a morphologically diseased pregnancy; in all probability the fusion of the spermatozoa and the ovum itself was wrong to start with. I wonder if that isn't true in all

those cases that have persistent vomiting, particularly if they are multiparae?

I did not attempt to empty the uterus all at once in this case, but I packed it rather tightly, put the woman to bed, and on the next day removed the packing, and the rest of the mole was expelled very readily without any difficulty.

When I left on Tuesday the woman had not vomited any more; she vomited only once after the pregnancy was interrupted, and she was taking fluid by mouth and was apparently on her way to recovery.

I just want to emphasize again that in mole, as in other conditions in medicine and surgery, you might be on the lookout for atypical cases as well as for typical cases.

DR. K. S. HOWLETT (closing): I am convinced from the discussion today, as well as from inquiry among my fellow practitioners, that this condition is much more frequent than we would be led to believe from the textbook statements. One out of 20,000 seems very rare.

As for myself, I have been practicing medicine, as I said, more than fifty years, ordinary country practice, and doing about the average amount of obstetrics that is done by a country doctor, without ever having met with a case. Hence, I had a very vague and indistinct idea of what hydatid mole was. I never thought I would meet up with it and didn't know whether such a thing really existed or not. I remembered indistinctly having read something about it.

The two cases that I mentioned, the one of hydramnios and this case of hydatid mole, suggest the idea that whenever there is a rapid enlargement of the uterus there seems to be a tendency to hyperemesis. Of course, we attribute hyperemesis to the toxemia of pregnancy, but in both of these cases it seems that the rapid enlargement of the uterus was accompanied by hyperemesis. In the case of hydramnios, the woman had gone into her seventh month, nearly, without excessive vomiting. At that time, after a hard day's work picking beans, where she stooped over a great deal, she began to have pain in the abdomen, and this was followed at once by a rapid accumulation of fluid, by rapid enlargement of the abdomen. She was treated by several doctors, including a stay in Vanderbilt Hospital of several days, always on the conservative plan, without any relief from her vomiting. She lost flesh rapidly. When I was called to see her she was already having some labor pains and dilatation.

I rather think that she passed a water bucket full of amniotic fluid when I punctured the membrane. The abdomen was very little distended when all that passed out. She gave birth the same day to a seven-month, very small baby.

I appreciate the discussion that the gentlemen have given my paper, and thank them very much. The discussion has added a great deal to the paper.

## LYMPHOGRANULOMA INGUINALE\*

G. VICTOR WILLIAMS, M.D., Chattanooga

LYMPHOGRANULOMA inguinale has been known for many years as climatic bubo, nonvenereal bubo, strumous bubo, tropical bubo, nontubercular lymphadenitis, and more recently some have written of it as poradenitis, lymphogranulomatosis inguinalis, lymphogranuloma inguinale, etc., but nothing was known of the etiology of this disease until Wilhelm Frei, in 1925, developed his vaccine, now known as Frei's vaccine, or Frei's antigen, and in testing these obscure conditions it has been found that these conditions, and only these, with their tertiary lesions, give a positive reaction to this vaccine.

John Hunter, in 1786, described these bubos, and they have since baffled all diagnosis and therapeutic attempts, as they defied the laws of tubercular, syphilitic, chancroidal or gonorrheal pathology and treatment, yet they were believed to be venereal, as they appeared in the early third and fourth decades of life, and followed sexual exposures.

Fournier, in 1875, described a condition of the anorectal region which he attributed to syphilis, and it became known as syphiloma of Fournier.

Recently many men were insisting that nonmalignant rectal strictures were from rectal gonorrhea. In the past the above-mentioned lesions have been very confusing in our endeavor to name or classify them, and many eminent men have endeavored to prove or classify them as tubercular, syphilitic or chancroidal, and now that we believe they are all different manifestations of the same disease, most authors are calling it lymphogranuloma inguinale, while others prefer to name it lymphopathia venereum, as they claim lymphogranuloma inguinale is confusing with granuloma inguinale, Hodgking disease, etc., and then besides, this disease in the female is more often not inguinal at all and occasionally not venereal

in the male. Wolfe and Sulzberger, 1932, advised changing the name from lymphogranuloma inguinale to lymphopathia venereum, to avoid the above confusion of diseases. Now while lymphopathia venereum is shorter than lymphogranuloma inguinale, nontubercular granulomatous, lymphadenitis, etc., yet it does not well describe the condition, for is not a syphilitic bubo and chancroidal bubo a lymphopathia venereum, and is not venereum not desirable for the patient's sake and for brevity in speaking of this or any other venereal disease? While this disease is venereal, are there not six or seven other venereal diseases not so designated by the stigma of the word venereum?

As Frei developed a test in 1925 by using pus from a known case on a suspected case now known as the Frei antigen test, I think we could well honor him for clarifying all these pathological conditions which have so long confused the gynecologists, venerologists, pathologists, internists, surgeons, and dermatologists by calling it "Frei's lymphopathia." This nomenclature will immediately classify it as reacting to Frei's antigen, and that it is a pathologic condition of the lymphatic glands positive to Frei's antigen, whether in the groin or perirectal region, or in the axilla, as the case reported by Hellerstrom of a surgeon operating on a case of inguinal adenitis in 1904 whose finger became infected and had his axillary glands go through a typical course. This surgeon, when tested by Hellerstrom with Frei's antigen in 1927, was found to be positive after a lapse of twenty-three years.

Frei's axillary lymphopathia would have described this condition and its location, while lymphogranuloma inguinale or lymphopathia venereum would not.

Buschke reported a case involving the submaxillary glands from a lesion on the tongue following an unusual sexual relation, and Frei's submaxillary lymphopathia would have described and located this path-

\*Read before the Tennessee State Medical Association, Chattanooga, April 10, 11, 12, 1934.



ological entity, and would give us some idea as to where the initial lesion had been.

#### DIAGNOSIS

The diagnosis of all these conditions were obscure, and they were not suspected to be due to the same disease or cause until Wilhelm Frei developed his vaccine or antigen in 1925, which has become known as Frei's antigen.

When Frei's antigen was tested on climatic bubo, lymphogranuloma, elephantiasis of vulva, elephantiasis of the penis, non-malignant rectal stricture, esthiomene, Fournier's anorectal syndrome and inflammatory stricture of the rectum, and old cases giving a history of nonchancroidal inguinale adenitis who exhibited umbilicated scars of their former inguinal bubos, were all found to give an allergic reaction to Frei's antigen. This allergic reaction differs in intensity in different individuals, as any other allergic reaction, and is probably positive for life, as cases are known to give a positive reaction in early cases from four to eighteen days after the bubo forms in acute cases and from then on. Some old cases have shown a positive Frei test from one to forty years later. All cases are not positive to a certain Frei antigen, and should a suspected case fail to react, it should not be dismissed as not due to Frei's lymphopathia. Most cases will react to Frei's antigen Type One, but otherwise typical cases failing to react to a certain antigen should have some of their sterile gland pus or dissected out glands, and of this a Frei antigen should be made or prepared, and one-tenth cc. of their antigen be injected in a known positive case, for this patient's infection probably belongs to Type Two. All Type One and Type Two cases are positive to Type Two, but not all cases are positive to Type One. In the presence of active syphilis, the Frei reaction may be negative but becomes positive as soon as the active syphilis is quieted by treatment. Many active lymphopathia cases will give a false positive Wassermann reaction, and many, not knowing this, will be misled in their diagnosis and treatment.

#### CLINICAL SYMPTOMS OR MANIFESTATIONS OF THE MALE

The initial lesions are so small and usually nonindurated and so fleeting that often and

usually the patient presents himself with a subacute inguinal bubo and denies having had a sore. Most men, seeing the initial lesion, would assure the patient that this small sore was probably herpes, and dismiss the case.

The bubo is not so painful or tender on pressure as a chancroidal bubo. The skin becomes attached to the underlying nodes and finally the skin presents a violaceous color by the time the bubo opens. Several glands are probably involved, and as they break the skin of the inguinal region it soon has several fistulous tracts which continue to discharge. This involvement of the glands usually appears in ten days to three weeks after the infective agent has entered the skin, and during the formation of bubos the patient usually has elevation of temperature and general malaise. The fever may be remittent or intermittent or typhoidal in type, caused by time of different lymphatic nodes suppurating.

The later clinical manifestations in the male will be dealt with under Frei's Rectal Stricture and Frei's Elephantiasis of the Penis or Scrotum.

#### CLINICAL MANIFESTATIONS IN THE FEMALE

The clinical manifestations or symptoms pictured in the female will be very similar to the male, provided the initial sore is on the labia majora. So often the initial lesion is in the vagina or on the cervix, and then we have no history of the patient's knowledge of even a fleeting pinhead or match head size sore, and no inguinal adenitis, but the patient may have some fever and malaise from suppurating of perirectal lymph nodes of Gerota with or without rectal stricture and with or without anorectal syndrome.

#### PRIMARY LESIONS

The initial lesions are said to be of four types:

1. A fleeting herpetic lesion resembling a herpes preputialis.
2. An ulcerative lesion.
3. A nodular or papular lesion somewhat resembling a beginning primary lesion of syphilis.
4. A specific urethritic type with a urethral discharge, but not showing any spe-

cific microorganisms, which appears a few days to a week post coitus.

### SECONDARY LESIONS

Secondary lesions are very apt to be the first noticed by even the patient, and are nearly always the first symptoms seen by the physician. The enlargement begins in ten to twenty days after exposure. They consist of slightly painful inguinal enlarged glands in the male. In the female we have a similar condition, provided the initial lesions are located on the labia majora or clitoris. If the port of entry is on the lower anterior wall of the vagina, we have an entirely different location of the lymphatic gland involvement, as the lymphatic glands along the iliac vessels may be the only ones involved, and it is said that these do not break down, so here we may have concealed secondary lesions with general malaise and fever. If on the posterior wall of the vagina or cervix, we have the perirectal glands involved, which do break down.

### TERTIARY STAGE

The tertiary stage follows probably many months from repeated suppuration and fibrosis and lymph blockage, and, if the perirectal glands or nodes of Gerota are involved, the rectal wall becomes involved in this fibrosis with stricture formation. Seneque outlines four types of inflammatory rectal stricture:

1. A pure stricture, limited to the rectum.
2. A rectal stricture with elephantiasis of the external parts.
3. Rectal stricture complicated with fistulas and which in the past have been considered tubercular because they were granulomatous in character although tubercle bacilli were not found.
4. Rectal strictures with pelvic cellulitis.

While the above outlines most of the female classifications of the strictures, I believe there are types or is a type showing esthiomene or elephantiasis of the labia majora without rectal stricture due, no doubt, to a more superficial lymphatic involvement, as in the male there may be an elephantiasis of penis or scrotum following inguinal adenitis. In Type One of Seneque's classification of a pure rectal

stricture, I believe eventually it will merge into one of his other types, and more likely into Type Two or Three.

### FREI'S ANTIGEN

Frei's antigen is made by withdrawing pus from an unopened suppurating bubo or from an infected gland which has not yet broken down, and by grinding this gland and adding normal saline solution to the macerated gland tissue or the pus making the solid matter from 10 to 20 per cent.

This is sterilized for two hours at 60 degrees C. on the first day and one hour on the following day, and using one-tenth cc. on the forearm, intradermally, on some known positive case. If this vaccine is found positive it may be used as a diagnostic test in suspected cases or be used therapeutically. This antigen will keep if preserved with 0.2 per cent phenol for three to twelve months.

It is said to withstand freezing for twenty-two days, but does not stand glycerine or formalin well.

### TREATMENT

The treatment of this disease depends on the stage of the disease and what pathology has been produced.

One is not often called on to treat the initial sore, even in the male, and practically never in the female.

The treatment of the bubos is not standardized, as some use tartar emetic, some X-ray, some surgical removal of the glands, and some are using Frei's antigen both subcutaneously and intradermally, and some intravenously, for the early and late lesions.

Carbon dioxide gas and carbon dioxide snow are recommended for late lesions by E. Jay Clemons of Los Angeles, Calif.

In a recent copy of J. A. M. A., page 766, March 10, 1934, William A. Thomas and Earl R. McCarthy report the use of an autogenous bouillon filtrate. E. Jay Clemons of Los Angeles says the treatment of nonmalignant rectal strictures is never surgical.

### SUMMARY

If Frei's antigen test is correct, it clears up the diagnosis of many pathological conditions which have baffled the profession



for many years. The pathology of this disease would be better understood if we would divide the stages into primary, secondary, tertiary, and quaternary.

The microorganism is unknown, but it has been demonstrated that it is a filtrable virus which can produce encephalitis in monkeys and has caused the disease in man experimentally from monkeys and has been transmitted to white mice, guinea pigs, and rabbits. Lymphogranuloma inguinale or lymphopathia venerum are misleading and embarrassing and do not sufficiently describe or locate the pathology or its port of entry.

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#### DISCUSSION

DR. J. A. McINTOSH (Memphis): It isn't often that our secretary makes mistakes, but sometimes he does, and in this particular instance in choosing me to discuss this paper, he has made a mistake. Occasionally I see and am called upon to examine the secretions from the ulcers around the reproductive organs. Many of us have thought, perhaps, that the reproductive organs are attacked by only two organisms: gonococcus and the spirocheta pallida; but that isn't true. There are other lesions that appear on and about the genitalia that vary in clinical manifestations and appearances.

It is not an uncommon thing to find herpes on the glans penis, just as we have it around the lips, and we have learned by patient experience that we cannot find spirocheta pallida in such lesions, though we have tried many, many times; nor do we find any other organism that we can see by the present methods.

This group of ulcerations we say are due to viruses. We are indebted to Dr. Goodpasture of Nashville for giving us a practical method for culturing various forms of viruses. I have had a little experience in trying to incriminate one particular organism that is found in genital ulcerations, but I acknowledge to you that I did not get very far with it. It is very difficult to prove the etiologic agent of these diseases.

Dr. Frei, with his antigen, has given to us a method of not only diagnosing but even treating certain ulcers. That is a good step, but I doubt the wisdom of attempting to name the disease in honor of Dr. Frei, though he has done considerable work along this line.

DR. J. A. STEWARD (Chattanooga): The disease lymphopathia venerum is an old one which has recently been identified. It is less than nine years since Frei first diagnosed the disease through the intradermal use of his vaccine. This method of diagnosis is the only accurate one which we have today. From the clinical aspect we know the disease can vary in its severity from a spontaneous subsidence to a severe, stubborn and lasting infection.

Dr. Williams, in his paper, has suggested that the disease be called Frei's lymphopathia. His objections to the present names are logical, but I can see no reason to confuse the literature further with a third name which neither identifies the disease by its etiological agent nor by any specific pathological description.

The classification that Dr. Williams suggests of the stages of this disease is a rational division

and should be of value in the study of any case. It is advisable to recall again that this is still a new disease and that only by identification and study of many cases will such a classification be thoroughly tested.

In discussing this lymphopathia, there are a few facts which should be emphasized. The disease at present is being recognized and tested for by proctologists and urologists. However, as in other diseases, the great majority of these cases will be seen by the general practitioner and the general surgeon, and it is most important, therefore, that physicians be alert to the possibilities of this condition and make the intradermal test, which is the only positive identification we have, in all suspicious cases.

In the treatment of this disease, surgery has a secondary position. In the second and third stages, any surgery is purely palliative to relieve localized pus. The principal treatment is medical along any or all the lines suggested by Dr. Williams. The intravenous use of antimony preparations has been found to be particularly efficacious. In the third stage of the disease, in which chronic sinuses of the inguinal region have been formed (and these may be present for years), surgery becomes more important, and it is only by radical excision of the

skin, sinuses and regional lymph nodes that recovery will take place. Following the excision, X-ray therapy and iodides may be used.

Your attention was called in the paper to the rectal manifestations of the disease. If the disease is looked for, proven, and treated, during its early stages, there will be less occasion for surgery in the fourth or sequela stage.

DR. G. VICTOR WILLIAMS (closing): I wish to thank Drs. McIntosh and Steward for their discussion. I am pleased that they both criticized or doubted the advisability of calling this variety of lymphopathic disease "Frei's Lymphopathia."

Of course, we feel it is best not to call a disease after a man, and I am not calling this "Frei's Disease." I object to either of its new names: lymphogranuloma inguinale, or lymphopathia venereum, as outlined in my paper, and still think that Frei's lymphopathia would be a suitable name, as it designates a certain type of disease of the lymphatics.

There are many varieties of lymphopathia, as Hodgkins' lymphopathia, syphilitic lymphopathia, chancroidal lymphopathia, tubercular lymphopathia, sarcomatous lymphopathia, carcinomatous lymphopathia, and now Frei's lymphopathia.



## POSTOPERATIVE PULMONARY COMPLICATIONS\*

### (A Review of the Literature)

JAMES W. McCLARAN, M.D., F.A.C.S., Jackson

MEDICAL literature prior to the last few years entirely ignored postoperative pulmonary complications. All of these complications were called "ether pneumonia." In the light of the study and literature of recent years, this term has been found to be a relic of the times when anesthetic methods were crude and X-rays were not available for the proper study and classification of these cases. Operations were short and there was a failure to diagnose the condition. There has been a steady decline in the operative mortality, but postoperative pulmonary complications have not only *not* decreased in the same ratio, but have increased. Early reports calling all postoperative pulmonary complications "ether pneumonia" cast an opprobrium on the anesthetic. As a result, search for other anesthetics was stimulated. Other inhalation anesthetics were developed, local anesthetics came into general use, and then spinal anesthesia became popular. Instead of so-called "ether pneumonia" decreasing markedly, to the amazement of anesthetists and surgeons, it increased. Then a more careful study began to be made, the X-ray was used extensively, and the early opprobrium cast upon ether was found to be a most unjust one. Many years ago the essayist contended there was no such thing as "ether pneumonia," and began studying his cases more carefully and having roentgenograms made, and my findings have been in keeping with those found in the literature.

While there is a difference of opinion in certain details and theories, there are many facts that are agreed upon by all authorities. The X-ray has done more than anything else to diagnose the condition and to properly classify the different complications. In this paper we will study the facts agreed

upon with unanimity and will also try to present briefly the different theories upon which there is a difference of opinion. In this paper we will eliminate the inevitable pulmonary complications that follow thoracic and pulmonary operations and injuries. They do not enter into this discussion. This paper will give the facts agreed upon by everyone and also, by a review of the literature consisting of statistics of thousands of cases, will attempt to arrive at the most probable solution of the facts and theories upon which there is a difference of opinion.

#### INCIDENCE AND ETIOLOGY

*Percentage of cases.* While the morbidity percentage varies very much with the location and type of operation, a review of a large number of cases will make the average of postoperative pulmonary complications about 3.5 per cent of all operations. Cutler and Hunt say that reliable statistics show that one in every thirty to fifty patients operated on develop pulmonary complications, and one in every 150 to 175 dies with such a complication. King, in statistics based upon two years of observation of the postoperative pulmonary complications which occurred on the general surgical service of the Massachusetts General Hospital, gives the percentage of these cases as six per cent as of all operations.

*Age.* Obese patients above the age of sixty seem more likely to suffer from postoperative pulmonary complications than others, but no age is exempt. They occur in children as well as in adults. Snell says it seems probable there is a group of patients over fifty years of age, obese and with normal or subnormal blood pressure, who are particularly susceptible to pulmonary embolism as a postoperative complication. Henle states that 27 per cent of patients over seventy years of age have postoperative pneumonia. Foss and Kupp state that these complications occur more in the aged.

\*Read before the Tennessee State Medical Association, Chattanooga, April 10, 11, 12, 1934.

*Sex.* A review of the literature shows that one of the facts agreed upon by all authorities is that postoperative pulmonary complications occur much more frequently in men than in women. Eliason and McLaughlin say that 70 per cent of their cases were males. Ravdin and Kern agree that these complications occur more in men. King says they occur twice as frequently in males than in females.

*Seasonal influence.* While there is some difference of opinion as to the influence this has on these complications, the latest statistics show that it has little or no influence on their development. King says the seasonal curve does not parallel that for lobar pneumonia or show any consistent seasonal rise. Stewart found in the first three years' review of his cases that the winter and spring months were more conducive, while the last two years' review reversed his opinion.

*Type of operation.* In a review of the literature and statistics of postoperative pulmonary complications, there is one fact that is agreed upon by all and that stands out as one of the most interesting findings in the study of these cases, and that is the fact that the overwhelming majority occur following laparotomies and herniorrhaphies, and the higher the laparotomy, that is, the closer it is to the diaphragm, the greater is the incidence. King says that, following all laparotomies and herniorrhaphies, 14 per cent develop these complications, and they are especially frequent after operations on the stomach, gall bladder, and intestine (40.2, 18.8, and 20.8 per cent, respectively). He further finds that the incidence among males following operations on the stomach and duodenum is 46.8 per cent; on the gall bladder, 35.6 per cent; and on the intestines, 26.2 per cent. This group he designates as the "bad risk" group. He finds that, with patients having gastric and duodenal suture, the incidence is 61.8 per cent. Stewart says that, in upper abdominal operations, the risks of these complications are double. DeQuervain stated that, following operations on the stomach, three-fourths of the true postoperative deaths are due to lung complications. Foss and Kupp find that pulmonary complications are infinitely less

common following operations on the upper respiratory tract than following operations on the abdomen and pelvis. Embolism and infarct are not unusual following urological operations. Wharton and Pierson state that embolism in its various forms is the cause of fully 50 per cent of the noteworthy pulmonary complications that occur after gynecological and abdominal surgery. They say one-half the deaths occurring after gynecological operations are the result of pulmonary embolism.

*Presence of preoperative upper respiratory infection.* Most authorities agree that upper respiratory infection at the time of operation is a very real and contributing cause of postoperative complications, and only acute surgical emergencies should come to operation in the presence of such or in the presence of an acute respiratory infection in the community, but Graham, in his "Surgical Diagnosis," says that the presence of acute or chronic pulmonary disease or nasopharyngeal infection has played little if any part in the production of these sequelæ.

*Presence of infection in the operative field.* King says the patient's general condition and sepsis and perforation play a definite part, and practically all authorities agree that postoperative pulmonary complications are more common in the presence of sepsis.

*Use of narcotics and sedatives.* This is a mooted question at the present time. Hugh Cabot says, "The administration of various barbituric acid derivatives and the increase of spinal anesthesia accompanied by pre-anesthetic medication with morphine and other drugs tend to create a larger group of patients in whom respiration is slowed over a considerable period of time quite apart from the conditions incident to the operation." Eliason and McLaughlin say the use of morphine after operation has no effect on the incidence of pulmonary complications. The vast majority of authorities now believe that the cough reflex should not be abolished.

*Type of anesthesia.* We wish to reiterate our prefacing remarks in this essay, in which we said that, with the advent of local and spinal anesthesia, and with the im-



proved forms of inhalation anesthesia, post-operative pulmonary complications not only did not decrease but markedly increased. We will admit that part of this increase is due to the alertness of anesthetists and surgeons in looking for these complications. Also, the use of the X-ray routinely in examining these cases. But the percentage has increased over and above these reasons. Foss and Schwalm, in the *Journal of the American Medical Association*, as recently as November 25, 1933, in a survey of 4,000 consecutive operations, one half under ether anesthesia and the remaining half under spinal anesthesia, say, "Our experience, as well as that of many writers, suggests an incidence about equal with the two forms, possibly even greater with spinal anesthesia, and this result coincides with that of McKittrick, McClure and Sweet, who compared the pulmonary complications in two surgical series, one in which spinal anesthesia was used and the other inhalations." Brown and Debenham found in 812 cases of post-operative pulmonary complications that they were five times more frequent after spinal anesthesia than after inhalation anesthesia, in spite of the fact that more "bad risk" patients were operated on under inhalation anesthesia. King says that in laparotomies and herniorrhaphies, 12.7 per cent of the patients operated upon under inhalation anesthesia develop pulmonary complications; 16.6 per cent of those under spinal anesthesia develop these complications; and 18.4 per cent of those under local anesthesia. These figures are from his personal observation. He says in a later paper that statistically the type of anesthesia plays no part. Foss and Kupp also say that the incidence is the same with all anesthesia. Where a local anesthetic is used, infarction is the only explanation of the cause of the pulmonary lesion.

*Chilling of the body.* Most authorities find that this has possibly some effect in the production of pulmonary complications. Kolodny says that chilling of the body is an etiological factor. Cutler and Hunt say it possibly plays some part, whether due to the exposure in the preparation of the patient or chilling of the body cavities with cold packs.

*Aspiration as a cause.* The findings of the last few years have caused a complete reversal of thought as to aspiration as a cause of these complications. Cutler has proven by long experimentation that abscess of the lungs is not caused by aspiration of infected material as in tonsillectomy, but is due to infected emboli. Coryllos states that it is very improbable that a true aspiration pneumonia exists. This is proven by the fact that more of these complications follow abdominal operations than follow operations on the head or throat. Cutler and Hunt and also Foss and Kupp say that aspiration plays but a minor role. Graham says that the production of pneumonia experimentally by the bronchial route is very difficult. Recent studies of Schlueter and Weidlein give great importance to embolism as a cause of lung abscess following tonsillectomy rather than aspiration.

#### TYPES OF POSTOPERATIVE PULMONARY COMPLICATIONS

As has been previously stated in this paper, until the past very few years no types were described, but all the complications were classified and placed under the term "ether pneumonia." We will attempt to show here that all the complications come under one of a few classifications. While lobar pneumonia occurs, it is no commoner following operation than its normal incidence, and is not an entity as a postoperative complication. We also consider pulmonary abscess and empyema are but sequelæ of a postoperative bronchopneumonia or infarction, and their diagnosis differs in no way from a diagnosis of these conditions at any other time.

Assuming the above to be true, then, what are the pulmonary complications common to the postoperative period? They are, in the order of their frequency: 1. Atelectasis. 2. Infarction or embolism. 3. Bronchopneumonia.

Atelectasis is divided into three types, depending on the amount of lung tissue involved, *i.e.*, a. Massive atelectasis or massive collapse of the lung, when more than one lobe is involved. b. Lobar atelectasis, involving only one lobe. c. Lobular atelectasis, scattered areas in one or more lobes.

This is usually erroneously called bronchopneumonia.

*Infarction or embolism.* These conditions differ only in the size of the embolus, the infarction being smaller. It is usually difficult even after careful examination to determine the site from which the embolus came. In infarction, if the X-rays are not immediately obtained after the onset of symptoms, the wedge-shaped areas may have disappeared, and if the areas are multiple, the condition may be mistaken for bronchopneumonia and the diagnosis missed.

Bronchopneumonia following operation is a further step in the cases of atelectasis and infarct, and usually in the unrecognized and untreated ones. If these cases are neglected, and of course in some cases in spite of recognition and treatment, bronchopneumonia ensues.

The number of cases of atelectasis has been multiplied many times in the past few years. This condition was first reported by William Pasteur in 1890, and interest was revived by the war work of Sir John Rose Bradford. We now find these cases by looking for them. Lee, Tucker, and Clerk believe "that the phenomena of pulmonary collapse of varying degrees, together with pulmonary embolism and infarction, are the real etiological factors in postoperative pulmonary complications." They believe over 70 per cent of the postoperative pneumonias are varying degrees of atelectasis. They believe that in the small proportion of true pneumonias developing postoperatively, all start as atelectasis, and upon these lesions are engrafted infarction and infection. Mastics, Spittler, and McNamee say that atelectasis comprises 70 per cent of all these complications, and that partial atelectasis is the most common type. Brunn and Brill state that the predominating type of postoperative pulmonary complication is atelectasis and that one type is very similar to lobar pneumonia. Cutler says abscess of the lung is due to infected emboli.

#### MECHANISM AND X-RAY FINDINGS

If it is true that over 70 per cent of postoperative pulmonary complications is atelec-

tasis and most of the balance infarct or embolus, then why are these conditions so common? What condition is present that causes them to be so frequent following operations? Why is the morbidity so much higher in laparotomies and in herniorrhaphies than in extraperitoneal operations? From a review of the opinions of the majority of investigators, the following probably takes place: 1. The force and depth of the respiratory movement is inhibited by abdominal operations, particularly high abdominal operations. 2. The diaphragm is elevated on the affected side due to changing of the subdiaphragmatic pressure from subatmospheric to atmospheric and the diaphragm is pulled higher in the chest on the affected side. 3. The cough reflex is diminished or absent, causing an accumulation of bronchial secretion, which becomes more tenacious. This finally plugs a bronchus or bronchiole, causing a corresponding collapse. The common theories as to the cause of this condition are three: 1. Bronchial occlusion. 2. Diaphragmatic fixation and elevation. 3. Reflex nervous phenomena. They are probably all involved, although the majority of authorities do not believe that the reflex nervous phenomena are responsible. Lee, Tucker, and Clerk say that three factors are constant: 1. A thick viscid bronchial secretion. 2. Inhibition of coughing. 3. Interference with respiratory movements.

It is unquestionably true that the respiratory movement is inhibited following abdominal operations, particularly high operations, by the pain following anesthesia, and this, with narcotics used, also inhibits the cough reflex. Tight dressings or binders also add to the inhibition of respiration. Brown says that thick, tenacious sputum is noted to plug the larger bronchi, whereas a thinner sputum tends to greater dispersion and the blocking of the finer bronchi and bronchioles, thereby producing a lobular atelectasis. Hugh Cabot maintains that atelectasis probably arises commonly from the following sequence of events: Mucus collects in the smaller bronchi, respiration is slowed and its depth diminished, sometimes by medication, sometimes by anesthetic, and finally, particularly in operations



on the upper abdomen, respiration is voluntarily restricted because of pain.

Brown and Debenham add something of interest concerning the frequency following spinal anesthesia. They say these complications are more prominent following spinal because it inhibits the force and depth of the respiratory movement during operation and also afterwards. The viscosity of the secretion of the tracheobronchial tree appears increased, *i.e.*, more tenacious, and, third, following spinal anesthesia, patients remain relatively quiet for a much longer period of time.

Taking into consideration the above opinions, it becomes evident that bronchial obstruction is the most important single factor in the production of atelectasis, probably in conjunction with a slowing and diminishing of the respiration and fixation and elevation of the diaphragm.

As far as embolism is concerned in the production of postoperative pulmonary complications, Foss and Kupp believe that embolism plays the chief part. They believe infarction or minor emboli are far more common than supposed. Cutler and Hunt say that embolism from the operative field is the chief factor in the etiology of such complications. It is favored by sepsis.

#### X-RAY FINDINGS

In atelectasis the X-ray findings are always the same. The involved area is denser than the surrounding lung; the heart and mediastinal contents are displaced towards the affected side; the diaphragm is high and in the early stages there is an absence of respiratory excursion; the intercostal spaces are narrow, but the costophrenic sinus is usually not obliterated. As pointed out by Sante, a marked change may take place in the postoperative collapse, if the patient is turned on the uninvolved side and allowed to cough. An atelectatic lung without mechanical obstruction should immediately reinflate. This should always be used in X-raying the chest if a differential diagnosis is difficult, because consolidation from other causes will not be affected.

The findings in an infarct can be demonstrated with the X-ray, if large, giving evidence of their presence by areas of increased

density, often triangular, at the periphery of the lung. If the infarcted area is very small, it will frequently not show up under the X-ray, especially immediately after the onset of symptoms. In the case of a large embolus, the roentgenographic manifestations may be entirely missing.

#### SYMPTOMATOLOGY

*Embolism and infarct.* The symptoms from this condition, of course, depend upon the size of the embolus or infarct. In a large embolus, the symptoms are fulminating, the patient dying almost immediately, or presenting alarming dyspnea or cyanosis. In a large embolus, diagnosis is usually obvious if the patient survives long enough to be examined. Embolus apparently differs from pulmonary infarction only on account of the difference in the size of the embolus. In pulmonary infarction there is usually a very abrupt onset of symptoms with blood-tinged sputum, and, if the area is large enough, evidence of a consolidated wedge of pulmonary tissue can be demonstrated by the X-ray. Usually the patient has a sharp pain in the chest and shortly thereafter begins to cough up sputum containing liquid or clotted blood.

*Atelectasis.* The diagnosis of this condition depends upon finding evidence of pulmonary consolidation, acute displacement of the heart toward the affected side. There is usually fixation of the affected side, or at least respiration is very much embarrassed. The affected side of the thorax is depressed. Cardiac pulsation can be seen on the affected side much outside of the normal position of the heart. Cough and expectoration are present. Rales are usually heard and are often bilateral. Bronchial breathing or suppression of breath sounds is present over the area of dullness. The unaffected side shows compensatory hyperexpansion. There is an absence of liver dullness if the right side is involved, due to the diaphragm being high.

If either of these conditions, embolus or atelectasis, goes on until bronchopneumonia is a sequela, then the symptoms of bronchopneumonia are the same as always exist in this condition.

*Treatment.* Prophylaxis is the best therapy. Hyperventilation by one means or another is becoming routine in most hospitals now. The prophylactic treatment consists of: 1. A reduction in operative trauma in an effort to produce as few small emboli as possible. 2. Every effort should be used to prevent further extension in septic cases. 3. Frequent changing of the position of the patient, postoperative. 4. Avoidance of constricting dressings and upper abdominal binders. 5. Proper posture. 6. Inhalation of carbon dioxide during operation and at intervals for two or three days after operation. 7. Avoidance of abolishing the cough reflex.

A reduction of operative trauma and an effort to prevent further extension in septic cases need no further discussion. They speak for themselves. The most valuable prophylactic treatment is the frequent change in the position of the patient. If the operative condition allows it, the position of the patient should be changed at least every two hours. This change of position is also the most valuable method of treatment after the condition has developed and consists of rolling the patient back and forth on the uninvolved side. Constricting dressings and upper abdominal binders inhibit the respiratory movement and have a tendency to cause atelectasis. Anything that causes limitation of motion of the chest should be avoided, and Kolodny uses hypodermoclysis in the thigh rather than subpectorally for this reason. There is a difference in opinion as to posture, some advocating the Trendelenberg, others the Fowler, while others prefer the semi-Fowler. The inhalation of carbon dioxide is unquestionably the greatest contribution, with the possible exception of postural changes, in the prevention of postoperative pulmonary complications. The avoidance of abolishing the cough reflex is of importance in preventing the accumulation of viscid secretion in the tracheobronchial tree with a resulting obstruction.

Sante says that the treatment is simple and effective, and consists in rolling the patient back and forth on the uninvolved side. It always proves successful in re-

establishing aeration of the lung. Hugh Cabot states that the most important single contribution to the ultimate safety of anesthesia in many years is the use of carbon dioxide routinely. He uses it during and at the conclusion of an operation and two or three times in twenty-four hours for the first two days. He says it is quite harmless.

Authorities are divided on the use of morphine. Some advise its liberal use, while others say you should use a minimum postoperatively on account of the tendency of inhibiting the cough reflex. Overholt believes in the adequate use of morphine to lessen abdominal pain. He says this outweighs the contraindication to its use on account of diminishing the cough reflex.

The semi-Fowler seems to be the approved position. Embolism as well as atelectasis is prevented by moving patient about in bed. All patients should have routine postural change and movements.

#### SUMMARY AND CONCLUSIONS

Following a review of the literature, the following conclusions are inevitable:

1. "Ether pneumonia" is an obsolete term, and ether and anesthetists should no longer be blamed for postoperative pulmonary complications.

2. Since the advent of local and spinal anesthesia these complications have increased.

3. These complications occur much more in males than in females.

4. The season has little or no influence.

5. These complications are infinitely more common after abdominal operations than any other type, and the higher the operation in the abdomen the more frequent they are.

6. Aspiration is rapidly losing caste as a cause of pulmonary complications.

7. The outstanding types are atelectasis and infarct or embolus, and if these are unrecognized and neglected, bronchopneumonia follows as a sequelæ.

8. The X-ray has done more to classify these cases and should always be used at the first sign of pulmonary involvement.

9. Prophylaxis is the best treatment and consists of the use of carbon dioxide inhalations and postural changes routinely, the



avoidance of constricting dressings, upper abdominal binders and inhibition of the cough reflex.

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### DISCUSSION

DR. W. O. FLOYD (Nashville): Dr. McClaran has given us a very excellent paper on this subject. He not only has given us very clearly the important points on these conditions as regards his own experience, but has very elaborately given us an extensive report and conclusion that he has brought to us from the literature on the subject.

This peculiar question, of course, concerns mostly the surgeon. It is a thing that not infrequently occurs regardless of what might have been the operation, and particularly regardless of what effort might have been made by the physician to avoid it, and I believe in our experience has occurred many times when least expected. To me it is one of the most embarrassing things that can happen, namely, to have a patient that is ready to leave the hospital, or that has his bag packed ready to go next morning, when all of a sudden the nurse reports that the patient has suddenly

died in a few seconds from a condition that you presume has been due to a lung complication. I say there is nothing more embarrassing. We have had that in our experience a few times, which brings to mind the question as to what could be done, or is there anything that can be done about such conditions. Of course, I think all of us readily agree that that is a thing that we not only do not expect, but about which many times nothing can be done.

The doctor spoke of the different opinions on the various phases of the subject as given by authorities in the literature, many of these opinions being quite in conflict, as I understood the matter, with reference to each other's ideas, and this in itself, I think, is very confusing and offers evidence that there is a good deal about it among even those who are very experienced that we do not know yet. When it does occur, if we are able to recognize it early, I heartily agree with all the doctor said about the management.

He spoke of the complications occurring in probably six or more per cent of all operations, as I recall. I am satisfied that that percentage of occurrence is considerably higher than has been the occurrence in our own limited experience.

He also spoke of the occurrence much more frequently in males, and I think according to general opinion and the literature that is unquestionably true, but that has not been true in our own experience; in other words, it has been quite the opposite in our experience. I can in a way explain that difference by saying that our female patients probably predominate three or four to one, but I do know we have had the complications occur in the female in our own practice much oftener.

With reference to the season, I think it is generally concluded that that probably does not play much part in the bronchopneumonia type of complication, but we have felt a little different on that subject, and particularly in late years, since we have had spinal anesthesia at our command, we do not dare to give a patient with a severe cold or an acute cold a general anesthetic, because I am sure all of us have seen general anesthesia light up a very active chest or respiratory cough with a shooting up of the temperature and considerable annoyance for a few days or even a number of days.

I heartily agree with what the doctor said about the complications arising most often after abdominal operations, particularly the higher abdominal operations, and with reference to what he said about the stomach and duodenum; I think we can explain that possibly by the extra amount of suture work there, particularly resection of the stomach or excising or resecting a duodenal ulcer. We have a good deal of suture work there in an effort to prevent leakage, and I have concluded that in some way the suture material may have something to do with the formation of future emboli that may lodge in the lungs and cause us very serious trouble.

I have noted this one thing in our own experience, that on several occasions when we have had this terrible complication occur, resulting fatally it has come up just about the time we have removed the wound sutures, either that same day or the next day or two. Whether or not that has played any part I do not know, but I have noticed that and have called the attention of my associates to that particular thing.

With regard to the percentages in which this may occur, even to as high as six per cent, I believe the doctor said, I am satisfied that that is a good deal higher than has been our experience, but the literature is quoted from men who have had extensive experience along these lines.

I want to agree heartily with what the doctor said about the septic cases being a more common field, probably, for the occurrence of those conditions, but in our own experience it has occurred, I think, about as often where we have had clean operations and clean wounds and the sutures have been removed and the patient just about ready to go home, when they suddenly popped up with a fatal embolus.

The doctor spoke of the cough reflex. I think that certainly plays a considerable part. I think if the patient has any type of anesthetic, particularly general, and does not have the reflex abolished, he stands a much better chance to avoid a complication of this character. That brings up the question of whether or not blocking of a bronchiole by mucus and other stuff is the cause of the trouble, or whether the infection that is in whatever is blocking the bronchus becomes more active as the result of the blocking of the bronchus. I think it is a very fine point, and it is a point that any of us may disagree on. I certainly think as yet it is very questionable as to which is at the bottom of the trouble.

The doctor spoke of the local anesthetics and the spinal anesthetics probably increasing the complications. Again, that has not been our own limited experience. If I understood him correctly, embolus in the bad risk patients with the general anesthetic would not be so common as possibly in the ones with the spinal anesthetic, but in our use of spinal anesthesia in the past several years, we have universally chosen bad risk patients to give spinal anesthesia to, where our operations were to be below the diaphragm. I can understand that there are some complications that may occur as the result of spinal anesthesia, but we use spinal anesthesia for the bad risk patients ordinarily instead of general anesthesia, particularly in bad hearts, extreme pressures of great height, kidney lesions, and in severe colds and pneumonias, when emergency operations are necessary.

DR. H. L. FANCHER (Chattanooga): Dr. McClaran has read a paper here that has been of very great importance to me. Quite a few years ago some experiments were carried out as to what effect ether had on the respiratory tract, and as I remember the summary of that was that ether did



not change the mucosa or the temperature below the bifurcation of the bronchus.

Another thing was a series of autopsies to prove the fallacy of so-called ether pneumonia. The experiments were published in the American Medical Association Journal, and there was very little comment on them at the time.

For a good many years I have paid no attention to the form of anesthesia as regards possible pulmonary complications. I have given ether to tubercular patients and to cold and 'grippe patients with perfect results. Some of my good friends at Erlanger think that I have been very, very radical, and yet I have not regretted it. I am kind of glad to know, even at this late date, that there is another series of experimentations going on to disprove old fallacies.

Dr. Floyd says that he doesn't give ether to patients that have a little cough or cold. Well,

that is still another old fallacy that Dr. Floyd holds to. There is no reason for doing it except that he always has done it, and when we know that ether doesn't affect the lung, that ether never produces a cough if given properly, we can say we use it satisfactorily. If ether is improperly given to a pulmonary case there isn't any question but that the exertion and extra lung work done will aggravate that pulmonary condition.

DR. J. W. McCLARAN (closing): I want to emphasize the fact that if you look for atelectasis you will find it. Secondly, I want to emphasize a very simple treatment. If you will routinely have a postural change of your patient, a change of position postoperatively, you will markedly decrease your pulmonary complications.

I appreciate the discussion.

## MANAGEMENT OF THE ASTHMATIC PATIENT\*

T. C. CROWELL, M.D., Chattanooga

FROM the voluminous literature of recent years, every physician has become better acquainted with asthma than formerly. Most of them know that asthma can be controlled in a certain percentage of cases, even if they are not familiar with the details of the newer methods in the management of these cases. They now know that there are available medical men who devote their whole time to this field of practice, and that such men did not exist until recently.

It is my purpose to explain briefly, in as few technical terms as possible, something of the underlying causes of asthma.

Every one is familiar with the fact that some people develop a rash if they eat strawberries. This is not due to some poisonous substance in the strawberry itself, but due to a peculiarity of the person who eats the strawberries, and this peculiarity lies in the cells which make up the person's body. The rash comes because the cells in this person's body have been changed or altered in some manner not clearly understood, so that the strawberries act like poison when in contact with them. Such cells are said to be sensitized, and such a person, in a sensitized or allergic state. He is therefore called a hypersensitive or allergic person. These people may be perfectly healthy in every other way except this one; and, furthermore, it must be understood that this condition is a very specific one—in this instance, only the strawberries cause the rash.

In recent years, medical men have made very careful studies of these conditions. They have found that a condition which closely resembles it can be produced in animals. This is known as anaphylaxis, and, if we understand this phenomena, we have a much clearer conception of asthma, hay

fever and other so-called allergic diseases.

We know, for example, that, if a guinea pig is given a hypodermic injection of egg white, no harm is done the animal and it remains perfectly well; but, if a second injection is given some fourteen days later, it proves fatal. What apparently has happened during these fourteen days is that the guinea pig has developed a sensitivity to egg white. Post-mortem examination shows that the guinea pig died with overdistension of the lungs, due to trapping of the air by spasmodic contractions of certain muscles, and an outpouring of mucus. The guinea pig died in a state of anaphylactic shock.

The similarity between the symptoms shown by the guinea pig prior to death from anaphylactic shock and symptoms exhibited by persons suffering from asthma was first pointed out in 1910. It is now generally agreed that asthma, hay fever, and numerous other allergic diseases are what might be called anaphylactic phenomena in the human being.

There are a number of striking facts about these allergic patients. One of the most important is the history of heredity. There is a positive family history in from 50 to 65 per cent, and it does seem that the tendency can be inherited, though not the specific disease itself.

The next important fact about these allergies is that they show positive reactions on the skin surface when the extracts of protein materials are applied in a prescribed manner, and, further, the majority show blood eosinophilia. These hereditary allergies may be divided into two groups, the immediate and the delayed.

*Immediate Allergies:* In this type the symptom develops almost immediately on contact with some offending substance—a horse or pollen—or within a few hours. When these patients are tested, they show a reaction of a positive wheal within a very few minutes.

\*Read before the Tennessee State Medical Association, Chattanooga, April 10, 11, 12, 1934.



*Delayed Allergies:* In contrast to the immediate type, there are reactions which begin not immediately, but from two hours to two or even three days after contact with the exciting cause. These are the delayed reactions, and this distinction is important, because in them skin tests with the specific substances are quite uniformly negative. In this group, occur most of the urticarias, eczema and infective asthma, and a few cases of asthma due to foods and to air-borne substances.

These delayed allergies account for the unsatisfactory results of tests in cases falling in this group. The important points to bear in mind concerning the clinical types of allergy and their reaction to skin tests are: (1) The positive skin tests to foods and air-borne substances are immediate reactions, and occur only in those cases where the clinical reaction is immediate; (2) the skin test is negative, if the clinical reaction is of the delayed type, hence, a negative test does not exclude the possibility of an allergy to the test substance; (3) delayed skin tests to foods and to air-borne substances have no known clinical significance.

#### ETIOLOGIC FACTORS IN ASTHMA

As previously stated, heredity is the important predisposing cause of asthma. It was shown positive in 67 per cent of my series of one hundred and sixteen cases in the skin sensitive type (and in 70 per cent in the infective type).

The age of onset in allergy is influenced by the degree of inheritance, as shown by the fact that, with bilateral inheritance, 75 per cent of the offspring will be affected; and, in 66 per cent of these, the onset will take place before the tenth year. When inheritance is unilateral, about 50 per cent of the offspring will develop allergy; and, in 31 per cent of these, the onset will be before the tenth year.

The cause of asthmatic dyspnea is edema of bronchial wall, and not so much bronchospasm, or muscular hypertrophy, as was formerly supposed. Plugging of the bronchi with thick, tough exudate must be regarded as an important factor also.

#### SPECIFIC CAUSES OF ASTHMA

The specific substances acting as causes for the asthmatic attack may be inhaled from the air (inhalants), ingested as foods and drugs (ingestants), or foci from infection, or injected subcutaneously (injectants). All these are the important factors in what we call the immediate reaction, and they usually give the immediate positive skin tests. Rarely may foods and inhalants act to produce the delayed reaction of asthma, and in such cases the skin tests are negative. Infection is the chief cause of the delayed reaction—so far as is known, it is always of this type.

Up to three years of age, in my group of twenty cases, it was found they were sensitive to food or to inhalants, but not to both. In the early years of life, the foods are most important, and they become relatively unimportant after the tenth or twelfth year. The air-borne substances come to the fore after the fifth year. The principal air-borne substances were house dust, pollen (principally ragweeds), and occasional asthma from the spring group of grasses and weeds. The animal dust group is small but very important. Feathers are a most important cause.

Of the foods as a cause, wheat, eggs, and milk are most common in children and rarely so in adults. Asthma may be found in children before the age of ten, from practically any food, and one should be alert to detect any possible offender. There is a tendency to spontaneous disappearance of food allergy in children before the tenth year. Cooke thinks that it occurs in nine out of ten cases. Unfortunately, however, this does not end the difficulty for these children; for about 50 per cent acquire clinical allergy to air-borne substances by the age of ten, and another 25 per cent by the age of twenty-five. This illustrates what is meant by the allergic constitution.

#### INFECTIVE ASTHMA

It is interesting to compare the sensitive and infective groups of asthma. In the early years, though not rare, it is not as

frequent as asthma occurring after the age of thirty-five.

#### TREATMENT OF ASTHMA

In the management of the asthmatic patient, it must be remembered that not a particular disease entity is being dealt with, but rather a condition which is the expression of the inherited allergic constitution, and this usually lasts through life. These cases, therefore, are not problems for the moment, but must be supervised and examined for developing tendencies at regular but infrequent intervals. The constitutional background cannot be changed, but the object of treatment is to reduce to the minimum the existing exciting allergens, and try to prevent new ones from developing.

An accurate and complete diagnosis of all the causes is a prerequisite of successful treatment. We cannot here discuss the details of diagnosis. Much has been written, and more might be said, about the uses, the interpretations, and vagaries of the skin tests, but it is important to remember that they are only aids when used with proper care, and that they constitute only one phase of a complete diagnostic study—not more than one-third.

#### THE ACUTE ATTACK

Adrenalin (epinephrine) in proper amount and repeated often is the drug of reliance. This must be administered early before the fully developed attack—before the exudate of serum and cells have occluded the lumen of the smaller bronchi—otherwise the effect is greatly diminished. The idea is to prevent the severe attack; but, once fully established, it must be met with precision and effectiveness. My plan is to give adrenalin hypodermically slowly and continuing over a period of 20 to 30 minutes, giving a minim or two every minute until effect is produced, keeping an accurate check of the pulse and condition of the patient. This is done after the manner of Bray. Doses of 5 to 8 minims every 2 to 3 hours is usually all that is required to keep the patient under control. Meantime, it becomes necessary to supplement with other measures, where the patient is near exhaustion

from many days of suffering. In such cases, one-half to one-third doses, 1/60 to 1/80 grains, of dilaudid are used alternately with the adrenalin—until such time as the patient is more comfortable. Morphine, in general, should not be used in bronchial asthma, if possible to avoid. The drug in full doses is a depressant to respiratory center, abolishes the cough reflex, and can be responsible for the onset of pneumonia in the severer forms of asthma and "Status Asthmaticus." First, empties the stomach; second, loosens mucus; third, sympathetic action. Emesis is effective in relieving attacks in children. Starvation is usually enforced, and food totally avoided. Stimulants are indicated frequently, and hot black coffee is one of the best, or caffen by rectum. Fluids are of great benefit in acute asthmas, as there is great loss through the skin and mucous membrane. Glucose by drip or intravenously is particularly indicated; not only for the immediate benefit to the patient, but because in practically all acute asthmas the blood sugar is very low, and glucose helps to restore to the normal level. Enemata and glucose by rectum should be a routine in practically all acute asthmas. Ephedrine doubtful.

#### TREATMENT OF THE ASTHMATIC STATE

Specific treatment of the skin sensitive type consists of removal or avoidance of the cause. In children sensitive to foods, this is most satisfactory, as they usually outgrow the sensitivity in a few years' time. In older children, it may be necessary to resort to injection of specific allergens, and indeed this is necessary if air-borne substances are the cause. These injections should be at frequent intervals, increased as to tolerance, and continued for several years. Care should be given to instruct the patient regarding the control of dust, dander, pets in and about the home, and this must be done in great detail. All treatment must be individualized. No fixed dosage.

#### INFECTIVE ASTHMA

This type of case is most difficult and results less satisfactory. It follows usually an acute infectious respiratory disease.



Most cases in my series followed influenza and occurred later in life. Large amounts of sputum are expectorated even without bronchiectasis. These cases run the typically chronic course with very few free intervals. They are awakened in the early morning with cough and some dyspnea, for which they usually find some ephedrine cough mixtures necessary for relief. The treatment must be directed towards removal of any septic foci, the building up of the general health, careful instructions as to the hygienic conditions surrounding the patient, the correction of constipation, and of great importance also is the management of the diet. Most cases suffer indigestion. We must lay stress on this phase—acid-producing diet after all foods removed.

In general, asthmatic bronchitis is a frequent occurrence and there is usually an associated general infection of the nasal mucous membrane and lymphoid tissues in the pharynx. In such cases, removal of the tonsils should be done *early*. In infective cases, the iodides by mouth are more effective, and, in some cases, partial relief may be obtained in doses sufficient to thin the mucous secretion only, no attempt being made to push the dose to the point of tolerance.

In my series of cases, more than half of them showed hypochlorhydria. In such cases, administration of hydrochloric acid by mouth seems to be of distinct benefit. I have not used hydrochloric acid intravenously, but reports from various sources would seem to indicate that the risk involved would not justify the results obtained. I have been unwilling as yet to subject these difficult cases to such a drastic procedure, when I believe that hydrochloric acid by mouth can accomplish approximately the same results. (The diet should be carefully regulated with special reference to the acid-producing foods, as in my hands this has been a distinct advantage.)

In this type of case, I make use of autogenous vaccine in every case in which I am able to produce symptomatic asthma. I have found that the skin test with bacterial proteins is of very little value in determining the organism responsible for the asthma

in the individual case. Frequently, the negative skin reactions with the vaccine may produce symptomatic asthma. In my work, this symptomatic reaction is the sole criterion as to whether I use the vaccine or not. Such vaccines must be used with very great care, but I have found the results justify the trouble in those cases in whom it has been used.

#### NONSPECIFIC TREATMENT

Various measures have been used in the hope of temporary or permanent relief, but such measures as tuberculin, typhoid, vaccine, milk, peptone, etc., I believe are of no value. Measures to produce artificial fever, such as heat or intravenous vaccine or even a large dose of bacillus coli intramuscularly, do seem to produce an effect, but at present the results are temporary and hardly worth the danger incident to their use.

Finally the nonspecific excitants, as psychoemotional states, e. g., nervous strain, fatigue, depression, and worry, are very important considerations in the management of the asthmatic patient, for the success or failure of treatment often depends upon the successful management of these conditions. Also, atmospheric conditions must be carefully studied. Undoubtedly, many asthmatics continue to have asthma in spite of complete elimination of all offending proteins, and despite the most intelligent handling of the problem of respiratory infection, only to have relief when they have moved from damp and humid or chilly locations to a sunny, dry, and warmer environment. If there are many irritants present, such as smoke, defective hot-air heating with its fumes, or chemical factories near by, a solution for this must be obtained. Overexertion and fatigue must be guarded against, and I find that anxiety is a very pernicious evil in these cases. In the management of these factors, the cooperation of the patient and of his relatives must be obtained.

Having thus analyzed the asthmatic patient from the point of view of allergic, infectious, and miscellaneous factors, and provided so far as possible a routine of therapy that will eliminate or minimize these

stimuli, it must further be recognized that the underlying reactivity of the patient persists. A realization of this fact is helpful both to the patient and the physician. To the patient, it provides an intelligent, wholesome attitude of watchfulness in avoiding his particular stimuli, and lifts his asthma to a considerable degree out of the realm of mystery and false reasoning that often surround each attack when his condition is not understood. To the physician, such an understanding makes for patient, intelligent guidance of the chronic asthmatic much in the same way that he guides his patients with chronic cardiac disease. He realizes the chronic tendency is present, and that at times the compensation established may be lost as a result of unfavorable conditions impossible to avoid. Finally, in no disease is it more true "that a stitch in time saves nine." This means that the patient with chronic bronchial asthma needs regular guidance from his physician, regardless of whether he is ill, in order that his "compensation" may be maintained. A clinical analysis of the factors leading to asthma as outlined is helpful in maintaining the best compensation possible.

#### ANALYSIS OF 116 CASES OF ASTHMA

Ninety-nine cases, or 85 per cent, were sensitive by test to one or more substances.

History of heredity averaged 54 per cent of all types.

Eosinophiles averaged 9 per cent.

Hypochlorhydria was present in 55 per cent.

Other allergy than asthma present in 38 per cent.

Age average of all types was 27 years.

Seventeen cases were nonsensitive—tests negative.

Eight had all the characteristics of allergic asthma, except positive tests.

In nine cases, etiological factors not determined, but are still under treatment.

Eight, or 44 per cent, have shown marked improvement.

Four have been relieved.

Nine were from the bacterial group of seventeen cases showing a marked tendency to nonsensitivity.

Four were from the mixed group of twenty-one also infected.

Thirteen of the seventeen nonsensitive patients were from the infected group.

Seventy per cent, or eighty-three cases, have been relieved and improved under treatment.

#### *Of the thirty-three unimproved cases—*

Eight had bronchiectasis, marked chest deformities of ten years' duration or more.

Twelve had sinus infection, arthritis, or chronic constipation.

Two had tuberculosis.

Two had gastric or duodenal ulcer.

Nine mixed nonsensitive, etiology not determined, long duration.

#### CONCLUSIONS

(1) The extrinsic asthmas are more typically allergic, the diagnosis more effectively made, and the treatment response three times more satisfactory.

(2) The bacterial and mixed types are less typically allergic, the diagnosis difficult, and the treatment less satisfactory (one-third of the extrinsic group).

(3) The food asthmas occupy an intermediate position, occur in younger age period, relief occurs in about 65 per cent, though the treatment is very tedious.

(4) The history is the key to the diagnosis—all other diagnostic factors revolve around it.

(5) The treatment must fit the peculiarities of the case.

(6) In absence of sensitivity, trust on history. Diagnose as allergic, if other factors are positive; otherwise use good judgment. Do not depend on skin tests.

(7) Plea for early diagnosis.

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### DISCUSSION

DR. H. C. LONG (Knoxville): Dr. Crowell has given us a very conservative and a very comprehensive paper on the management of bronchial asthma, showing the progress that has been made in recent years as a result of scientific research and clinical observation. Almost all workers in this field, as Cooke, Rackemann, Coco, Balyeat, have stressed the factor of heredity. A few have raised a dissenting voice to this, especially Adam, of Glasgow, who is reviewing several hundred cases, states the heredity is no more a factor in bronchial asthma than it is in gout or a great many other diseases.

Environment has scarcely been touched on, but we have all seen the remarkable results, or so-called cures, that have occurred by moving the patient out of the environment where he has been living, probably in a low and damp section, to the top of a hill, or where a patient goes from the South to the North; apparently as long as they remain in the new regions they are free from symptoms. The converse is also true in some instances—that change of environment precipitates attacks.

Emphasis should be placed upon complete history, physical examination, urinalysis, complete blood count, Wassermann test, X-ray examination, otolaryngological examination; not only to determine a diagnosis of bronchial asthma, but to determine whether it is extrinsic or intrinsic, also to determine if the asthma is due to or associated with diseases that are due to a lack of oxygenation, as myocarditis, hypertension, throat infections, endocrine disturbance, goiter, gall-bladder disease, and a great many others associated with wheezing. As Chevalier Jackson has said, "All is not asthma that wheezes."

The skin tests when positive are considered confirmatory only and are of value to that extent; a sufficient number should be made to establish the presumptive exciting agents.

Treatment should not be confined solely to the acute attack. The best treatment would be prophylaxis. Families or individuals with a family history of attacks, or of allergy, should be watched, and measures taken early, so that these individuals will not develop the attacks.

Many other factors are necessary in treating asthma to see that the individual is built up physically, that he is developed into a stable individual nervously. Endocrine factors are of importance, too, probably. Mental and physical overwork are recognized as factors in upsetting the vagus and sympathetic balance. We should not, then, simply test out or determine if these cases

are due to pollen or animal emanations, food, or bacterial products, but we should treat the cases as individuals from every standpoint to get them in condition where they will be in good physical condition. All are familiar with the fact that the individual that is in good physical shape, and is getting along well in his environment, is less likely to have any allergic manifestations.

DR. J. A. McINTOSH (Memphis): I simply rise to discuss briefly the paper, because the doctor touched on a few things on which emphasis might be made. One is the factor of fear that goes along with asthma. I married an asthmatic lady; we are living together. Several days ago we purchased some new window shades. From these window shades there emanated a disagreeable odor. My wife had an attack that evening. I came home while she was having this attack of asthma. She said, "I must have air." We went to the rear part of the house, where I raised a window, and the window fell down on my hand—you will observe some dressings on my finger. My wife was greatly concerned because I had hurt my hand; it was bleeding, and it almost knocked me out. Her asthma quit right then; she had no more asthma.

Now she is definitely allergic and she is sensitized to the streptococcus, because we can give her minute amounts of the streptococcic antigen and produce in her an attack of asthma.

Fear is the only thing that I am bringing out, that fear sometimes will terminate an acute attack of asthma in asthmatics that are sensitized to streptococcus. It did in this one case.

The next point is the use of enemas. It is very difficult to get an acute asthmatic to take an enema. They are usually constipated. Of course, the old remedy, castor oil, works beautifully, because after you start it down you cannot raise it by vomiting, as a rule. The use of castor oil, and the use of a warm enema, and maybe the giving of a little sugar, will certainly raise the individual's resistance while in this attack, and sometimes a very warm enema will relax the spasm and relieve the patient.

DR. T. C. CROWELL (closing): I regret very much that I did not have an opportunity to cover the treatment of asthma. The discussion of the acute attacks covers only a small phase. The greatest trouble we have is the management of particularly the infective asthmas, but you will get that in the published paper.

I may say in that connection that I find autogenous vaccine of great help, particularly that vaccine which gives symptomatic asthma.

The skin test with bacterial substances as brought out by Thomas in Boston, I believe, I find of no value whatsoever.

I wish to thank those who discussed the paper.

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H. H. SHOULDERS, M.D., Editor and Secretary

NOVEMBER, 1934

## EDITORIAL

### THE AMERICAN ASSOCIATION FOR SOCIAL SECURITY

22 East 17th Street, New York City, N. Y.

The above name is attached to an organization of people who are busying themselves in the writing of legislation to be introduced into the various general assemblies throughout the United States when they convene. The legislation is intended to accomplish *social security*.

We know nothing of the size of the organization. We do know that a few names connected with this organization have been connected with other socialistic and communistic movements.

A tentative draft of a bill has been sent out to various groups throughout the country for the purpose of obtaining criticisms and suggestions which may or may not be embodied in the final draft to be introduced into the various assemblies. This tentative draft covers twenty-two typewritten pages, single spaced. It is nothing more than the same old insurance scheme that has been proposed for a long time. Under its provisions a fund is created. Employees will contribute three per cent of their wages to the fund. The employers will contribute  $1\frac{1}{2}$  per cent of their pay rolls to the fund and the state another  $1\frac{1}{2}$  per cent of the pay rolls, which means that 6 per cent of all pay rolls will be paid over to this fund. The fund is to be administered by a commission of five people who will hold office for six years. The commissioner of health insurance is to be chairman. The commissioner of health will also be a member, and three other members, one of whom represents the employers, one represents the em-

ployees and one the medical profession. This commission may have two advisory councils, a financial advisory council, consisting of nine members—three of whom represent the employers, three the employees and three the public, and a medical advisory council consisting of doctors, surgeons, dentists, hospital commissioners, nurses, etc. This commission will arbitrarily set up administrative districts with offices and officials, and these districts again will be subdivided into local areas which may be as many in number as the commission may see fit to create. The commission will have the power to fix salaries, the number of employees, and to arrange for the medical care of those eligible to receive it. In the final analysis the commission will have autocratic power. It has power to construct hospitals and clinics. It has power to contribute funds to local hospitals not operated for profit. It has complete power to hire or fire as it may see fit.

The benefits to be derived from the fund are cash benefits to the extent of one-half the weekly wages of employees not to exceed \$15.00 per week, with additional benefits for dependents, and medical benefits, including home care, office care, hospital care, etc.

There are certain maternity benefits in addition to the other benefits. In fact, the benefits apply in all cases of disability excepting those which are taken care of under the workmen's compensation laws already in effect.

All wage earners with an income of less than \$250.00 per month must be members of the fund. It will be optional with higher salaried persons.

Reference to this particular matter is made at this time for the reason that the legislature of Tennessee convenes in January. There will be little opportunity for representatives and senators who are elected to canvass the sentiment of their local communities at all or to analyze the far-reaching effects of such legislation. There is a possibility that these representatives and senators may be swept off their feet by high sounding names such as Social Security. Certainly everybody is in favor of social security, but there certainly is not a una-



nimity of opinion as to how to obtain social security. Everybody is for peace if it can be honorably attained, but we remember that the late Senator Sawney Webb of Tennessee said that "some people simply have to have peace shot into them." It is beginning to appear that there are a lot of people who want social security shot into them with the ammunition furnished largely by the industrious, self-sacrificing, thrifty people who do not squander their means on themselves.

A tremendous amount of information on this subject has been accumulated by the American Medical Association, which is available to members.

It would be wise for the members of the medical profession to familiarize themselves with this measure and to inform their representatives and senators.

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#### THE PROGRAM OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER

The American Society for the Control of Cancer has been in existence for a number of years. There is good ground for disputing as to whether it has done much good.

Some years ago the educational program of the Society was directed at the education of lay people. Most of the literature was not understandable by lay people. As a result of which a mental *confusion* with *fear* resulted. At the present time the educational program is designed to accomplish two objectives. First, that every practicing physician of the country be familiar with every new development that has taken place as regards the recognition and treatment of cancer. Second, that lay people be not frightened but that they be taught to consult a physician when an abnormal lump or a persistent ulcer makes an appearance.

It is interesting to note that this group of people after years of experience have come to the conclusion that the way to work out the problem is to work through the organized medical profession. This does not mean, of course, that every case of cancer will be cured. It simply means that if patients with a suspicious lesion consult a doctor early, and if that doctor makes a thorough examination of the patient, the

proper steps will be taken to give the patient the greatest possible benefits which medical science has to offer.

It is interesting to observe that this organization which has existed for many years and has had long experience, has arrived at the very sensible and sane conclusion that the way for it to achieve results in the public interest is by working through organized medicine.

We now have at the state headquarters office several films prepared and furnished by the society which are to be used before medical societies. They should be shown to every medical society in the state. Any local society can obtain a film by writing the headquarters at Nashville. They would be an attractive part of any society program.

This work is done through our cancer committee composed of A. G. Kern, Chairman, Knoxville; A. M. Patterson, Chattanooga; J. A. Crisler, Jr., Memphis; Jos. W. McClaran, Jackson; Howard King, Nashville; E. T. West, Johnson City; J. A. McCulloch, Maryville.

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#### CREDIT WHERE CREDIT IS DUE

In the October issue of the Journal an editorial appeared under the above heading. In that editorial attention was called to certain propaganda which was being circulated in which wild claims were made as to the accomplishments of the Nursing Council in Nashville, Tennessee. A few days after that appeared the head of the Nursing Council wrote a letter to the editor and received a reply. This correspondence is reproduced herein.

"October 18, 1934

"Dr. H. H. Shoulders

Doctors Building

Nashville, Tennessee

"My dear Dr. Shoulders:

"My attention has been called to an editorial in the Journal of the Tennessee Medical Association regarding a Community Chest publicity article.

"You are entirely right. Many of the statements in the newspaper article were absurd and when it was published we re-

gretted, deeply, that it had been written up in that style.

"But, if the facts were distorted for the sake of publicity, this was not done by me nor with my sanction. I believe that if you will review the few brief articles printed over my name you will concede that I have never made such absurd statements or claims as appeared in the one to which you refer.

"We all know that one of the many factors entering into the saving of baby lives is the magnificent contribution of our skilled physicians who give so generously of their services to the indigent.

"Having the highest regard for the opinion of the medical group, I have worked long and hard to merit their respect and confidence and it is the greatest humiliation of my life that I have been shown up to them in such an unfavorable light.

"Very sincerely yours,  
(MRS.) IVAH W. UFFELMAN,  
Director Nursing Service."

IWU B

"October 19, 1934

"Mrs. Ivah W. Uffelman  
Director Nursing Service  
801 Demonbreun Street  
Nashville, Tennessee

"Dear Mrs. Uffelman:

"This acknowledges your letter of the 18, in reference to an editorial which appeared in the October issue of the Journal of the Tennessee State Medical Association.

"I am gratified to know that you did not approve of the untruthful and unwarranted publicity referred to. Certainly such statements do not contribute to that harmony and cooperation which is essential to the best interest of the public.

"May I suggest that you notify the Community Chest and the daily papers which ran the material of your disapproval. After all is said and done, this publicity has already gone out and received wide circulation and the mind of the public has been distorted thereby. A correction of this distortion, it seems to me, is essential. I feel confident that the papers would be glad to carry a correction since this propaganda

has been run as a news item and not as a paid advertisement, however, if it has been run as a paid advertisement it is all the more culpable.

"If I may have your permission, I will try and take occasion to run your letter in the Journal, as I think the profession should know your position and attitude.

"Very truly yours,  
H. H. SHOULDERS,  
Secretary-Editor."

HHS B

If any attempt has been made to correct the false impression created, notice of such acts has not come to our attention.

## DEATHS

Dr. W. E. Vaden, Chattanooga; Vanderbilt School of Medicine, 1899; aged 63; died October 22.

Dr. J. J. Harrison, Jr., Loudon; Chattanooga Medical College, 1899; aged 57; died October 7.

Dr. Robert H. Baker, Watertown; University of Nashville Medical School, 1873; aged 87; died September 29.

Dr. John R. Parker, Gallatin; Louisville Medical College, Louisville, Kentucky, 1893; aged 62; died suddenly on November 6.

## WOMAN'S AUXILIARY

President-----Mrs. Willis Campbell  
Memphis

President-Elect-----Mrs. R. G. Reaves  
Knoxville

Press and Publicity-----Mrs. W. W. Wilkerson, Jr.  
Nashville

The plans for the Auxiliary meeting in San Antonio during the middle of this month, when the Southern Medical Association has its annual meeting, sound very attractive and inviting. We are sure that the fortunate members who attend will enjoy a unique and gala visit. News comes to us that Mrs. John Sheay and Mrs. Harry



Schmeisser, of Memphis, and Mrs. T. G. Pollard and Mrs. Hollis Johnson, of Nashville, are planning to go. We are sure there are other Tennesseans going, and that as usual the Volunteer State will be well represented.

#### REPORTS OF LOCAL AUXILIARIES

Shelby County—Mrs. Percy W. Toombs, President.

A meeting of the Woman's Auxiliary to the Memphis and Shelby County Medical Society was held at the University of Tennessee College of Medicine, Wednesday morning, October 17, with Mrs. Percy W. Toombs, president, presiding. Forty-two members were present. The president presented a request by Mrs. Willis Campbell that the Auxiliary lend its active support to the sale of Christmas Red Cross seals for the benefit of the Shelby County Tuberculosis Society and assist also in the Red Cross membership drive. Mrs. Campbell was assured of the full cooperation in these activities. Dr. O. W. Hyman, administrative officer of the College of Medicine, addressed the Auxiliary, expressing appreciation for cordial support which the college had received from the Auxiliary. He presented plans for developing the new University Center, and pointed out certain details to which the Auxiliary could contribute helpfully, should this objective prove of interest. It was decided to hold a musical tea on December 18, at the home of Mrs. Willis Campbell, for the entertainment of the wives of doctors attending the meeting in Memphis of the Radiological Society of North America. At the conclusion of the meeting a delicious luncheon was served.

Davidson County—Mrs. B. F. Byrd, President.

Honoring new members of the organization, the Woman's Auxiliary to the Nashville and Davidson County Medical Association entertained at tea Friday afternoon, October 5, at the home of Mrs. T. G. Pollard. Mrs. Byrd presided over a brief business session, presenting to the group the officers and committee chairmen for the year. Mrs. Fowler Hollabaugh was elected treasurer for the remainder of the year, fol-

lowing the resignation of Mrs. W. R. Cate. Mrs. Carl McMurray made an announcement in the interest of the Community Concert movement. Mrs. Pollard, membership chairman, and Mrs. Byrd received the forty guests who attended the tea.

### NEWS NOTES AND COMMENTS

Dr. C. Sidney Burwell, Professor of Medicine at the Vanderbilt University School of Medicine, delivered the annual Cutter Lecture on Preventive Medicine at the Harvard Medical School on Thursday, November 8. His subject was "The Prevention or Postponement of Death from Heart Failure."

The opening of the Dr. Edwin W. Cocke Sanatorium and Clinic near Memphis has been indefinitely postponed. Due announcement will be made before the opening.

### MEDICAL SOCIETIES

*Benton, Carroll, Henry, Weakley:*

Two Memphis physicians appeared on the program of the Tri-County Medical Society at McKenzie. Dr. Gilbert J. Levy read a paper on the "Treatment of Meningitis," and Dr. Emmett R. Hall discussed "The Diagnosis and Treatment of Some of the Common Skin Diseases." Physicians from surrounding counties attended the meeting.

*Cumberland, Overton, Jackson, Putnam, and White Counties:*

This society will meet at the Shamrock Hotel in Gainesboro on November 18. This group of counties meets for scientific programs on the third Thursdays of the odd months. The meeting places are the county seats of the counties. Usually about twenty-five doctors are present. A good program always repays those in attendance. This group of counties has been meeting for seven years and their experience is added proof of the wisdom of combining several counties into one society.

This year Dr. W. C. Officer, Monterey, is president. Dr. Alex B. Shipley, of Cookeville, is secretary.

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#### *Davidson County:*

October 9—Case reports: "Mesenteric Thrombosis with Operative Recovery," by Dr. L. W. Edwards. "Exophthalmic Goiter in a Child Less Than One Year Old," by Dr. R. C. Elliott. "Broncho-oesophageal Fistula," by Dr. H. S. Shoulders.

October 16—Report of the committee appointed to study and suggest revision of the Constitution and By-Laws of the Academy of Medicine, Drs. W. C. Dixon, J. O. Manier, H. H. Shoulders.

October 23—"The Instance of Ectopic Pregnancy in Gynecological Conditions," by Dr. D. C. Seward. Discussion opened by Dr. W. C. Dixon.

October 30—"The Effect of Outside Influences on Medicine with Special Reference to Specialization of Medicine and Dangers of Contract Practice," Dr. J. H. J. Upham, Dean, College of Medicine, University of Ohio, Columbus, Ohio, Chairman, Board of Trustees, American Medical Association.

"Gestational Polyneuritis, with Movie Film," Dr. E. D. Plass, Professor Obstetrics and Gynecology, College of Medicine, University of Iowa, Iowa City, Iowa.

November 6—The Academy of Medicine has accepted an invitation of the Phi Beta Pi Medical Fraternity to meet with them at Neely Memorial Auditorium and hear a lecture by Dr. Chauncey Leake, Professor of Pharmacology, University of California, on the subject, "Art and Medicine."

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#### *Hamilton County:*

November 22 — "Urinary Urobilinogen; the Value of Routine Estimation," by Dr. Phillip H. Levinson. "Normal and Abnormal Behavior," by Dr. J. B. Swafford.

November 29—Thanksgiving.

December 6—Election of officers.

December 30—"Corneal Infection," by Dr. C. L. Lassiter. "Whooping Cough," by Dr. J. B. Phillips.

#### *Knox County:*

October 9—Dr. H. E. Kleinschmidt, of New York, Director of Health Education of the National Tuberculosis Association, was the essayist.

October 16—"Erysipelas," by Dr. A. H. Lancaster. Discussion opened by Drs. Kyle Copenhaver, H. C. Long, E. G. Wood, and R. G. Reaves.

October 23—"Health Insurance," by Dr. R. G. Reaves.

October 30—"Urology and the General Practitioner," by Dr. Tom R. Barry.

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#### *Robertson County:*

On October 16 the physicians and dentists of the county met following a dinner given at the new hospital.

Dr. John S. Freeman, county health officer, chairman of the board of governors of the hospital and promoter of its building, led the discussion on "The Hospital and Cooperation of the Medical and Dental Professions." The general discussion was opened by Dr. W. J. Core of Nashville, after which every person present entered into the consideration of various phases of the matter.

It was impressed upon those at the meeting that this institution is Robertson County's hospital, and all members of the profession were not only welcome to use it, but were urged to bring their patients here for treatment. Complete harmony prevailed, and it was unanimously agreed to make every effort to insure the hospital's success.

All physicians of Springfield agreed to cooperate in the formation of a staff, each taking a term of service to be available at any time for emergency cases.

The medical society admitted to its membership Dr. J. E. Wilkison of Springfield, who is associated with Dr. W. W. Porter, and Dr. Herst of White House.

Physicians present were: Dr. W. F. Fyke, Dr. M. L. Bradley, Dr. R. D. Moore, Dr. R. L. Mathews, Dr. A. R. Kempf, Dr. W. W. Porter, Dr. W. B. Dye, Dr. J. E. Wilkison, Dr. J. S. Hawkins, and Dr. J. S. Freeman of Springfield; Dr. Herst of White House; Dr. J. R. Connell of Adams, president of the society; Dr. J. P. Anderson of Orlinda, Dr. J. W. Thomas of Cross Plains, and Dr. W. J. Core of Nashville.

(Continued on page 465)



## LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. J. O. Manier, Nashville.  
 Vice President for East Tennessee—Dr. W. B. Campbell, Cleveland.  
 Vice President for Middle Tennessee—Dr. J. K. Blackburn, Pulaski.  
 Vice President for West Tennessee—Dr. G. H. Berryhill, Jackson.  
 Secretary—Editor—Dr. H. H. Shoulders.  
 Assistant Secretary—Editor—Dr. W. M. Hardy.

## TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.  
 Dr. Ralph Monger, Medical Arts Building, Knoxville.  
 Dr. W. L. Williamson, 915 Madison Avenue, Memphis.  
 Dr. H. B. Everett, 2541 Broad Street, Memphis.  
 Dr. E. R. Zemp, Walnut Street, Knoxville.

## COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.  
 Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. J. H. Revington, Chattanooga.  
 Fourth District—Dr. J. T. Moore, Algood.  
 Fifth District—Dr. John W. Sutton, Petersburg.  
 Sixth District—Dr. L. W. Edwards, Nashville.  
 Seventh District—Dr. C. D. Walton, Mt. Pleasant.  
 Eighth District—Dr. J. R. Thompson, Jackson.  
 Ninth District—Dr. E. H. Baird, Dyersburg.  
 Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.  
 Dr. H. H. Shoulders, Nashville; Middle Tennessee.  
 Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.  
 Dr. M. M. Cullom, Nashville; Middle Tennessee.  
 Dr. E. C. Ellett, Memphis; West Tennessee.

## OFFICERS OF COUNTY MEDICAL SOCIETIES FOR THE YEAR 1934

County	President	Vice President	Secretary-Treasurer
Anderson	J. M. Cox, Coal Creek	Thomas Jennings, Clinton	J. S. Hall, Clinton
Bedford	S. S. Moody, Shelbyville	W. T. Sharp, Farmington	Alfred Farrar, Shelbyville
Blount	E. W. Griffin, Townsend	C. C. Vinsant, Maryville	H. A. Calloway, Maryville
Bradley	E. R. Ferguson, Cleveland	Vance H. Bell, Cleveland	D. N. Arnold, Cleveland
Campbell	R. J. Buckman, Westbourne	S. S. Brown, Jellico	F. A. McClintock, Newcomb
Carroll	O. W. Fesmire, McKenzie	E. W. Hillsman, Trezevant	J. H. Williams, McKenzie
Carter	C. B. Baughman, Elizabethton		E. T. Pearson, Elizabethton
Cocke			J. E. Hampton, Newport
Chester, Henderson, and Decatur			Wm. I. Howell, Lexington
Cumberland	E. W. Mitchell, Crossville		V. L. Lewis, Crossville
Davidson	John M. Lee, Nashville	W. G. Kennon, Nashville	N. S. Shofner, Nashville
Dyer, Lake, and Crockett	W. S. Alexander, Ridgely	B. G. Marr, Dyersburg (Dyer) R. E. Hellen, Ridgely, (Lake)	J. Paul Baird, Dyersburg
Fayette, Hardeman			B. F. McNulty, Bolivar
Fentress	I. R. Storie, Jamestown		J. P. Sloan, Jamestown
Gibson	Featherston Douglas, Dyer	Paul D. Jones	F. L. Roberts, Trenton
Giles	John Morris, Pulaski	Joe B. Wright, Lynnville	T. F. Booth, Pulaski
Greene	C. P. Fox, Greeneville	L. E. Dyer, Greeneville	M. A. Blanton, Mosheim
Grundy	D. H. Bryan, Monteagle	T. F. Taylor, Monteagle	U. B. Bowden, Pelham
Hamblen	D. R. Roach, Morristown		R. A. Purvis, Morristown
Hamilton	Franklin B. Bogart, Chattanooga	James L. Bibb, Chattanooga	Wm. J. Sheridan, Chattanooga
Hardin, Lawrence, Lewis, Perry, and Wayne	J. W. Danley, Lawrenceburg		C. C. Stockard, Lawrenceburg
Haywood	R. T. Keeton, Brownsville	Glenn T. Scott, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Peachall, Puryear	Elroy Scruggs, Paris	R. G. Fish, Paris
Hickman	L. F. Pritchard, Only	C. V. Stevenson, Centerville	W. K. Edwards, Centerville
Humphreys			W. W. Slayden, Waverly
Jackson	J. D. Quarles, Whitleyville	R. C. Gaw, Gainesboro	F. B. Clark, Gainesboro
Knox	E. A. Guynes, Knoxville	H. T. McClain, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	J. L. Dunavant, Ripley	T. E. Miller, Ripley	J. R. Lewis, Ripley
Lincoln	J. E. Sloan, Boons Hill		J. M. McWilliams, Fayetteville
Loudon			J. Gilbert Eblen, Lenoir City
Macon	D. D. Howser, Lafayette		J. Y. Freeman, Lafayette
Madison	Kelly Smythe, Bemis	Swann Burns, Jackson	S. M. Herron, Jackson
Maury	Robert Pillow, Jr., Columbia	C. O. Fowler, Springhill	
McMinn	W. R. Arrants, Athens	Watt Keiser, Columbia	C. D. Walton, Mt. Pleasant
McNairy	John R. Smith, Selmer	D. B. Brendle, Englewood	R. W. Epperson, Athens
Monroe	F. M. Roberts, Sweetwater	G. B. Curry, Selmer	H. C. Sanders, Selmer
Montgomery		J. A. Hardin, Sweetwater	W. J. Cameron, Sweetwater
Obion	W. B. Harrison, Union City	Ilar Glover, Union City	Paul E. Wilson, Clarksville
Overton			Frank Kimzey, Union City
Polk	H. P. Hyde, Copperhill	T. J. Hicks, Copperhill	A. B. Qualls, Livingston
Putnam	J. T. Moore, Algood	T. M. Crane, Monterey	F. O. Geisler, Isabella
Roane	John Roberts, Kingston	F. A. Neergaard, Harriman	Thurman Shipley, Cookeville
Robertson	J. R. Connell, Adams		W. W. Hill, Harriman
Rutherford	W. T. Robison, Murfreesboro	J. D. Hall, Readyville	J. S. Hawkins, Springfield
Scott			J. A. Scott, Murfreesboro
Sevier	O. H. Yarberry, Sevierville	R. J. Ingle, Sevierville	D. M. Woodward, Huntsville
Shelby	W. L. Williamson, Memphis, J. B. Stanford, Memphis, President-Elect	W. L. Rucks, Memphis	C. P. Wilson, Sevierville
Smith	W. B. Dalton, Gordonsville	R. E. Key, Monroville	J. J. Hobson, Memphis, Treasurer;
Sullivan and Johnson	W. K. Vance, Jr., Bristol	J. V. Hodge, Kingsport (Sullivan) J. C. Hutchinson, Crandall (Johnson)	A. F. Cooper, Memphis, Secretary Thayer S. Wilson, Gordonsville
Sumner	H. H. Bate, Castalian Springs	J. H. Stephens, Hendersonville	Arthur Hooks, Bristol
Tipton	G. B. Gillespie, Covington		L. M. Woodson, Gallatin
Warren	E. L. Mooneyham, Rock Island		L. J. Lindsey, Covington
Washington	N. E. Hartsook, Johnson City	W. J. Mathews, Johnson City	John S. Harris, McMinnville
Weakley	T. W. Fields, Dresden	T. V. Hannings, Martin	C. H. Long, Johnson City
White	R. E. Lee Smith, Doyle	E. B. Clark, Sparta	E. J. Huey, Martin
Williamson	H. C. Stewart, Franklin	Dan German, Jr., Franklin	A. F. Richards, Sparta
Wilson	S. B. McFarland, Lebanon	R. L. Witherington, Lebanon	K. S. Howlett, Franklin J. R. Bone, Lebanon

## STANDING COMMITTEES

## COMMITTEE ON SCIENTIFIC WORK

H. H. Shoulders, Chairman, Nashville  
 A. F. Cooper, Memphis  
 W. J. Sheridan, Chattanooga  
 Jesse C. Hill, Knoxville

COMMITTEE ON PUBLIC POLICY AND  
LEGISLATION

L. W. Edwards, Chairman, Nashville  
 T. R. Ray, Shelbyville  
 Robert Sullivan, Nashville  
 Battle Malone, Memphis  
 Tom R. Barry, Knoxville  
 J. O. Manier, ex officio, Nashville  
 H. H. Shoulders, ex officio, Nashville

## COMMITTEE ON MEDICAL EDUCATION

O. S. Warr, Chairman, Memphis  
 W. H. Witt, Nashville  
 Franklin Bogart, Chattanooga  
 Oliver Hill, Knoxville

ADVISORY COMMITTEE TO THE WOMAN'S  
AUXILIARY

B. F. Byrd, Chairman, Nashville  
 Percy Wood, Memphis  
 Eugene Abercrombie, Knoxville

## LIAISON COMMITTEE

Hiram A. Laws, Chattanooga (five years)  
 Tom Mitchell, Memphis (four years)  
 J. L. Raulston, Knoxville (three years)  
 W. C. Dixon, Chairman, Nashville (two years)  
 W. P. Wood, Knoxville (one year)

STATE TUBERCULOSIS HOSPITAL  
COMMISSION

W. S. Rude, Chairman, Ridgetop  
 O. N. Bryan, Nashville  
 H. R. Townsend, Oakville  
 James L. Hamilton, Chattanooga

## HOSPITAL COMMITTEE

Lee Gibson, Chairman, Johnson City  
 D. R. Pickens, Nashville  
 E. H. Baird, Dyersburg  
 E. Dunbar Newell, Chattanooga  
 Kyle C. Copenhagen, Knoxville  
 W. K. Edwards, Centerville  
 J. A. McIntosh, Memphis

## CANCER COMMITTEE

A. G. Kern, Chairman, Knoxville  
 A. M. Patterson, Chattanooga  
 J. A. Crisler, Jr., Memphis  
 James W. McClaran, Jackson  
 Howard King, Nashville  
 E. T. West, Johnson City  
 J. A. McCulloch, Maryville

Dentists in attendance were: Dr. Morgan W. Boozer, Dr. Leslie W. Doss, Dr. Joe E. Swann, and Dr. Robert J. DeBerry, all of Springfield.

*Washington County:*

This society will meet on December 6. Dr. N. E. Hartsook will read a paper on "Diseases Resulting from Latent Sinusitis Which Are Usually Seen and Treated by the Family Physician." Drs. Blanton, Gibson, and Hawkins will discuss the paper. Dr. J. W. Wallace will read a pediatric paper which Dr. Poole will discuss.

*Wilson County:*

On December 6 the speaker will be Dr. S. B. McFarland, and "Gastric Ulcer" will be the subject. At this meeting officers will be elected and dues paid for the coming year.

## OTHER MEDICAL SOCIETIES

VANDERBILT UNIVERSITY MEDICAL SOCIETY  
October 5, 1934

## 1. Case Report:

Addison's Disease—Dr. Albert Weinstein.

A 42-year-old white spinster has had tuberculosis of the lymph glands, spine, lungs, and right kidney for 23 years. She developed the classical signs and symptomatology of Addison's Disease. The nausea and vomiting became so severe that she was admitted to the hospital. Total blood base, blood sodium, and chlorides were low. She was started on a high salt regimen and there followed a complete relief of all untoward symptoms.

Case discussed by Dr. Burwell.

2. The Factors Conditioning the Transmission of Syphilis by Blood Transfusion—  
Dr. Hugh J. Morgan.

The transmission of syphilis by blood transfusion becomes manifest in the recipient by the development of the acute, secondary stage of the disease within from one to three and one-half months after the transfusion. Syphilis is transmissible by blood transfusion when, and only when, the



virus is present in the donor's blood. This is known to occur only during the early stages of the infection before the development of latency, or during pregnancy in the chronic disease.

Paper discussed by Dr. Bryan.

3. Studies of Intestinal Reaction—Drs. C. S. Robinson, Ralph Johnson, and Michael Cogan.

Experiments on dogs with Thiery-Vella fistulae and critical experiments on rats and dogs have demonstrated the existence of a reaction gradient from about pH 6.5 in the duodenum to 7.0 or 7.8 in the ileum. Solutions placed in the intestine assume a reaction characteristic of the section of the gut in which they are held.

Paper discussed by Dr. Wells.

4. Modern Developments in the Radical and Conservative Treatment of Leg Ulcer. An Experimental and Clinical Study—Dr. Beverly Douglas.

Experimental and clinical studies of healing under elastic adhesive gave: Ulcers of the leg (90): Healed, 96.6 per cent; improved, 3.3 per cent; late recurrences, 4.4 per cent. Ulcers elsewhere (23): Burns, decubitus, etc. Cured, 100 per cent, no recurrences. Healing progressed more rapidly in the cured cases than the ideal rate computed by Carrel, Hartmann, and duNouy for sterile wounds. An effort was made to establish definite indications for radical treatment of ulcers. These indications are listed. In all of the fifteen instances of this type in our personal series excision followed by full thickness, "sieve," grafting has resulted in permanent healing.

Paper discussed by Dr. Bryan.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Cyclopropane Anesthesia. Ralph M. Waters, M.D., and Erwin R. Schmidt, M.D. *Journal A. M. A.*, September 29, 1934.

In an effort to eliminate the cause of certain cardiac irregularities that seemed to condemn propylene as an anesthetic, Lucas and Henderson

studied a possible containment. It is isomer cyclopropane. This agent proved not to be the factor causing cardiac damage, but to be a more potent anesthetic agent than propylene, causing very little change in the physiologic processes of laboratory animals. In addition, they found cyclopropane rapid in action, pleasant to inhale, of slight toxicity in effective concentrations, and susceptible of being rapidly eliminated.

The authors summarized the clinical results in a series of cases in the various surgical services of the Wisconsin General Hospital. They found that it was a very efficient anesthetic. In concentrations as low as 4 per cent it was capable of producing narcosis. Fourth stage or respiratory arrest was produced with an average concentration of 42.9 per cent. Oxygen was always administered exceeding 20 per cent. Cyclopropane is capable of forming an explosive mixture, and, like ether, it is heavier than air. Like ether, it causes respiratory arrest.

In reference to danger signals, it was found that the pupils dilate sluggishly in morphinized patients, and the sign is of little value. Color cannot be used as indication of the degree of narcosis or of danger, because an excess of oxygen should be present and the patient is always pink. The most valuable signs of danger are changes in the character of the pulse, arrhythmia, slowing of the pulse below 50 or a definite increase in rate.

Postoperative complications compared favorable with ethylene and nitrous oxide and were much less frequent than with the same number of cases of ether anesthesia.

### DERMATOLOGY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

Acne Vulgaris and the Roentgen Rays: A Statistical Report. George M. MacKee, M.D., and Franklin I. Ball, M.D., New York City. *Radiology*, September, 1934.

The author's report on 606 patients who were given X-ray treatment as long as it was thought necessary by the physician. Contact with these patients was maintained over a period of two years. Approximately 50 per cent were permanently cured in from six weeks to four months.

Four hundred and twenty-two patients were treated without X-rays, and these remained under observation for several years. Forty per cent were cured in from six months to two years, most of whom required over eight months.

Without X-ray treatment, there were approximately 40 per cent failures; with X-ray treatment, failures amounted to about 5 per cent.

With X-ray treatment, complete or almost complete clinical cures were obtained in about 83 per cent of the patients in four months or less time.

Without X-ray treatment, 62 per cent were cured

in from six months to two years. Recurrences were more frequent with X-ray treatment.

No patient in the entire series developed any injurious result from X-ray treatment.

### OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

Anatomical Findings After Diathermal Puncture of the Eyeball in Retinal Detachment. Franz Fischer. American Journal of Ophthalmology, September, 1934.

Two patients who had been operated on by the Safar method died on the eighth and fourteenth days after operation, respectively. In each case penetrating wounds were found in the sclera as well as superficial defects. The canals were filled with granulation tissue which arose in the greatly inflamed scleral tissue. In some instances the canal traversed the choroid as well. The scleral change did not extend beyond a diameter of 0.5 mm. except in areas where multiple punctures were near together. Here the areas of reaction were confluent. There was extensive hemorrhage into the subchoroidal space. In the first eye the picture was complicated by a massive hemorrhage which infiltrated the choroid and separated it from the sclera in the area of operation. In the second eye extensive changes in choroid, pigment epithelium, and retina were limited to the areas of diathermal necrosis in the sclera. The tissues were densely infiltrated with round cells and were firmly adherent to the sclera at the site of each puncture hole. The retina is not always injured in these areas, although some portions of the retina are severely injured.

### PEDIATRICS

By JOHN M. LEE, M.D.  
Doctors Building, Nashville

Value of Calmette (B.C.G.) Vaccination in Prevention of Tuberculosis in Childhood. Arvid Wallgren, M.D., Gothenburg, Sweden. Journal A. M. A., November 3, 1934.

A vaccine should be free from any element of danger and should be effective. It has been definitely proved that B.C.G. vaccine produces a certain amount of immunity in animals. Heimbeck reported three nurses acquired tuberculosis out of 136 vaccinated with B.C.G., while 14 of the 34 unvaccinated nurses acquired the disease. It is felt that B.C.G. is a safe vaccine. It should be given only to those free from infection, and those receiving vaccine are best protected against exposure to infection until the inoculation has had time to become effective, from four to thirteen weeks, or longer if possible.

New-born infants are regarded as free from infection, and may be given B.C.G. Older patients

that have been in contact with tuberculosis should be removed from such contact for six or seven weeks, and if the tuberculin test is negative after this time, may be given B.C.G. Patients receiving B.C.G. should show a positive tuberculin test before they are considered protected. This develops in from four to thirteen weeks. The duration of protection from this vaccination is unknown.

In Gothenburg (population 250,000), every child known exposed to tuberculosis has been vaccinated with B.C.G. since 1928, 355 being so treated by the end of December, 1933. In the vaccinated group there were five deaths from other causes, autopsies showing no evidence of tuberculosis. All the vaccinated children had roentgen examinations annually and at other times if they appeared ill.

In the three five-year periods immediately preceding 1927 the mortality rate for tuberculosis in childhood was 4.3, 4.2, and 3.4 per thousand, respectively. The rate for the five-year period after 1928 was 1.4 per thousand, and in 1933 it was 0.3 per thousand. During this time the general tuberculosis death rate did not show the same downward tendency. The author feels that the use of B.C.G. definitely contributed to the lower mortality rate for tuberculosis in Gothenburg.

### SURGERY—GENERAL AND ABDOMINAL

By ROBIN F. MASON, M.D., F.A.C.S.  
735 Medical Arts Building, Memphis

The Symptom-Complex of Complete External Pancreatic Fistula. Robt. W. Garis, M.D., and Walter C. Merkel, M.D., Baltimore, Md. S. G. & O., Vol. LIX, No. 4, October, 1934.

The purpose of this article is to substantiate the clinical syndrome and pathological significance of the loss of the external secretion of the pancreas in the human, as shown by others in experimental work on animals.

Pavlov and others noted that an open pancreatic fistula in dogs caused digestive disturbance, but regarded death therefrom as exceptional.

In 1916 it was shown by others that exclusion of the pancreatic juice from the intestine caused disturbance in the absorption of fat and nitrogen. Not till 1926 was it shown that when the entire output of the pancreas was excluded from the body death inevitably ensued in from five to eight days.

Many other subsequent experiments down to the present have confirmed the vital importance to life of the pancreatic juices.

The uniform lethal syndrome following these experiments is characterized by anorexia, vomiting, asthenia, loss of weight and dehydration. The inevitable changes are progressive anhydremia, slight acidosis, loss of chlorides, and elevation of blood urea nitrogen shortly before death.

Post mortems invariably showed nothing but inflammatory and degenerative changes in the pancreas.



It was generally agreed for the most part that the loss of salts, water and protein per fistula and vomitus, played an important role in the early death. This supposition was attested by the uniformly beneficial results attendant upon the intravenous use of Ringer's solution, or physiological salt solution.

Apparent restoration of moribund dogs was also attained by the oral administration of whole pancreatic juice.

"Instances of proven complete pancreatic fistula are very rare in the literature."

After a fairly comprehensive survey of the literature only one Simon-pure case was found. This was reported by Kleinschmidt.

The fistula followed a gastric resection, and the symptoms were marked anorexia, great loss of weight, and fatty stools on a mixed diet.

Kleinschmidt says the diagnosis is easy. If, after such an operation as mentioned, a clear corrosive fluid is discharged showing the digestive properties of pancreatic fluid, the diagnosis is obvious.

Difficult diagnosis is caused where there is a mixture of other secretions with the pancreatic juice, or where the fistula is incomplete.

The authors stress the desirability of closer scrutiny, in the future, of all deleterious persistent *biliary* fistulas; their idea being that there is probably some pancreatic juice intermixed with the bile and that that is what is most harmful.

#### CASE REPORT

White, housewife, aged 61 years; healthy always till three years prior to admission, when she had vomiting, high abdominal pain, clay-colored stools, and slight jaundice with acute pain. During next two years had many such attacks. She had had typhoid at 17 years. After physical examination, which showed nothing startling, a diagnosis of ch. cholecystitis with stones was made. On operation numerous adhesions were revealed about right and transverse colon and a thick gall bladder containing one stone. Pancreas, liver and stomach looked normal. Adherent appendix was found and removed, along with the gall bladder. One drain was inserted down to stump of cystic duct. Patient went along about as usual till sixth day, when drain was removed. During second week patient had fluid stools and no alarming symptoms, but did not appear to gain strength. On thirteenth day postoperative profuse clear bile-colored fluid began pouring from incision. This was followed by anorexia, great weakness, and vomiting. At same time stools became bileless and foul, containing large amounts of fat microscopically. Fluids were maintained by glucose and saline.

On twenty-second day patient went into a state of complete exhaustion. Blood count showed leucocytes 32,000, with hemoglobin 120 per cent. Under vigorous fluid administration she rallied and blood count came down.

On thirtieth day after operation fluid recovered from the fistula was re-fed to patient through Levine tube, without producing any improvement. The apathy, weakness and distress continued and increased and finally patient succumbed to a complicating bronchopneumonia five weeks after operation.

Post mortem showed that the pancreatic duct was blocked by a papillomatous growth which dammed the pancreatic fluid back into cystic duct and thence out through fistulas. The ligatures on the cystic duct were not found.

"The question is raised as to whether the exclusion of pancreatic juice from the intestine in some types of acute obstructive jaundice may not be the major factor in the rapidly fatal outcome as for example in carcinoma of the ampulla of Vater and carcinoma of the pancreas."

### UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
Medical Building, Knoxville

The Management of Urologic Complications in Injuries to the Spine. Connors and Nash. *Am. J. Surg.*, October, 1934.

This article is presented by a general surgeon in an effort to crystallize a routine treatment of spinal injuries to avoid urinary infection.

There were 2,324 spinal injuries in the United States Army during 1917-18. References as to this incidence in British and French armies are also appended, as well as a large series of private cases. The United States Army report shows 80 per cent mortality in the first few weeks from urinary infection. The most important complications of spinal injuries are urinary tract infections.

The treatment of bladder retention due to bladder neck pathology is in no way analogous to retention due to spinal injury. He does not even consider a tabetic bladder as analogous.

Changes in the spinal cord are: 1. Fragments of bones causing contusion of nerves. 2. Hemorrhage into cord wounds. 3. Edema of cord.

Concussion, destruction, or compression of the vesical center may follow the above injuries. This first results in bladder retention for a period of several days or weeks, but sooner or later the sympathetic nerves take over the work of the spinal nerves, and an automatic bladder is the result.

The kidneys may respond to a spinal injury either by a hypo or hyper secretion of urine. He cites one case dying in eight hours due to a complete urinary suppression.

Normally the bladder is controlled in three ways: 1. Cortical and subcortical centers. 2. Vesical center in cord. 3. Ganglia (hypogastric and inferior mesenteric).

Urinary infections are the most important of all complications following spinal injuries due to disturbance of bladder innervation (residual urine). The peristalsis of the ureter is not interfered with. Besley states that he had never seen a case of cystitis in an uncatheterized bladder. In another series of forty cases where instrumentation had been carried out, 77 per cent developed infection. This author reports forty-nine cases treated without catheterization, and none developed infection.

The management of these cases may be summarized as follows:

1. Manual pressure over the bladder to express the urine.
2. Stimulation by mass reflex.
3. Distention and overflow.
4. Cystotomy (a last resort).

Twenty complete case histories are included together with a rather complete bibliography. This article is well worth reading.

## BOOK REVIEW

Davis' Applied Anatomy, by Mueller. Publishers, J. B. Lippincott Company, Philadelphia. Price, \$9.00.

The book under review is the ninth edition of Davis' Applied Anatomy. It has been completely revised by Dr. George P. Mueller, who has been assisted by Drs. Alpers, Moorehead, Kimbro, Ravdin and Weeder.

Those associates have completely revised that portion of the text dealing with the brain and spinal cord, the pelvic organs in women, and the genitourinary tract and the abdominal viscera.

The previous editions were well illustrated, but this edition is more elaborately illustrated than any previous edition. It contains 674 illustrations, many of which are in color.

The book as a whole is enlarged, containing now 717 pages. It is an excellent book, reasonably priced, considering the workmanship involved in its production.—H. H. S.

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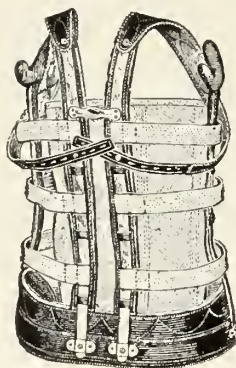
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# THE JOURNAL

OF THE

## TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

ISSUED MONTHLY, Under Direction of the Trustees

H. H. SHOULDERS, M.D., Secretary and Editor

W. M. HARDY, M.D., Asst. Secretary-Editor

OFFICE OF PUBLICATION, 510 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXVII

DECEMBER, 1934

No. 12

### PROCEEDINGS OF THE HOUSE OF DELEGATES OF THE TENNESSEE STATE MEDICAL ASSOCIATION, CHATTANOOGA SESSION

APRIL 10, 11, 12, 1934

The opening session of the meeting of the House of Delegates, held in connection with the One Hundred and First Annual Meeting of the Tennessee State Medical Association, April 10-12, 1934, at the Hotel Patten, Chattanooga, convened at two-twenty o'clock, Dr. E. R. Zemp, Knoxville, the Speaker of the House, presiding.

Speaker Zemp requested Secretary Shoulders to call the roll, after which committees were appointed as follows:

*Credentials Committee* — Dr. Ralph Monger, Knoxville, chairman; Dr. R. F. Mason, Memphis; Dr. J. C. Pennington, Nashville.

*Committee on Reports of Officers*—Dr. L. W. Edwards, Nashville, chairman; Dr. R. H. Newman, Knoxville; Dr. J. R. Thompson, Jackson.

*Committee on Reports of Committees*—Dr. W. B. Burns, Memphis, chairman; Dr. C. M. Hamilton, Nashville; Dr. L. E. Coolidge, Greeneville.

*Committee on Resolutions*—Dr. M. S. Roberts, Knoxville, chairman; Dr. W. H. Avery, Shelbyville; Dr. Franklin B. Bogart, Chattanooga.

Secretary Shoulders stated that the minutes of the previous meeting had been published in the December, 1933, issue of the JOURNAL. Dr. S. R. Miller, Knoxville, moved that the minutes, as published, be adopted. The motion was seconded, put to a vote, and carried.

#### REPORTS OF OFFICERS

Dr. J. O. Manier, Nashville, was called on for his report as Treasurer and Chairman of the Board of Trustees.

DR. J. O. MANIER, Nashville: Mr. Speaker, Members of the House of Delegates: It has been customary, so far as the report of the Treasurer is concerned, to merely submit to this body an audit made by a certified public accountant, so I hereby submit that audit, as it would take too much time to read it and the Secretary in his report

usually covers in general what has happened to the finances of the Association.

#### REPORT OF AUDIT FOR YEAR ENDED

DECEMBER 31, 1933

*To the Chairman and Board of Directors, Tennessee State Medical Association, Nashville, Tennessee.*

SIRS:

Complying with your request we have made an audit of the Cash Receipts and Disbursements Record of the Tennessee State Medical Association for the year ended December 31, 1933.

The results of our investigation are presented in the accompanying Comments on Audit and on Exhibit and Schedules designated as follows:

*Exhibit "A"—Statement of Receipts and Disbursements for the Year Ended December 31, 1933.*

Schedule A-1—Cash in Banks.

Schedule A-2—Statement of Receipts by Months for the Year Ended December 31, 1933.

Schedule A-3—Statement of Medical Defense Fund for the Year Ended December 31, 1933.

Schedule A-4—Statement of General Fund for Year Ended December 31, 1933.

Schedule A-5—Statement of Investment Account as at December 31, 1933.

#### Comments on Audit

Cash, \$388.18. This item is composed of \$66.16 on deposit in the American National Bank and \$322.02 on deposit in the Third National Bank at December 31, 1933, and was verified by reconciliations of the Banks' statements with the Association's records.



All Cash Receipts appearing in the Receipts Register were traced into the depositories. Tests of receipts were made which indicated proper accounting therefor.

Signatures and endorsements on cancelled checks were examined and payees and amounts compared with the Cash Disbursement Record for a verification of Disbursements.

Investments, \$9,716.21. This item, shown in detail on Schedule A-5, represents \$10,000.00, face value, 6 per cent First Mortgage Real Estate Notes less payments on principal of \$283.79. These notes were examined at the American National Bank, where they are deposited for safe-keeping.

A Fire Insurance Policy of \$500.00 on Office Furniture and Fixtures and a Fidelity Bond of \$10,000.00 on the Treasurer, Dr. J. O. Manier, were in effect on December 31, 1933, both of which will be subject to renewal in the year 1934.

Attention is directed to Schedule A-3, Statement of Medical Defense Fund for the Year Ended December 31, 1933, and to Schedule A-4, Statement of General Fund for the Year Ended December 31, 1933, which show, respectively, \$441.75 and \$931.99, expenses incurred in 1933, but which were unpaid at December 31, 1933. The items comprising these totals were paid during the first two months of 1934. There was \$430.32 owing to the Association for advertisements appearing in issues of the MEDICAL JOURNAL during 1933.

Twelve issues of the MEDICAL JOURNAL were printed and distributed during the year, the costs of which are shown on Schedule A-4.

Respectfully submitted,

OSBORN & DUNCAN.

W. M. DUNCAN,

Certified Public Accountant.

March 17, 1934.

#### EXHIBIT "A"

#### Statement of Cash Receipts and Disbursements for the Year Ended December 31, 1933

RECEIPTS	
Dues	\$5,902.00
Medical Defense, Schedule A-3	1,150.00
Advertising	3,500.23
Interest on Investments	560.83
Payments on Principal of Investments	283.79
Miscellaneous	551.85
<b>Total Receipts</b>	<b>\$11,948.70</b>
DISBURSEMENTS	
Medical Defense, Schedule A-3	\$1,383.98
Medical Journal, Schedule A-4	2,537.85
Convention Expense, Schedule A-4	649.81
Salaries, Schedule A-4	5,037.50
General Expense and Other Disbursements, Schedule A-4	2,139.14
<b>Total Disbursements</b>	<b>\$11,748.28</b>
Excess of Receipts Over Disbursements	\$200.42
Represented by:	
General Fund Balance, 1-1-33	
(Deficit)	(769.12)
Medical Defense Fund Balance, 1-1-33	956.88
Balance in Bank, 1-1-33	187.76
Balance in Banks, 12-31-33, Schedule A-1	388.18
<b>Increase in Cash Balances in Banks</b>	<b>\$200.42</b>

#### SCHEDULE A-1

##### Cash in Banks

Balance American National Bank, 12-31-33, per Statement		\$ 66.16
Balance Third National Bank, 12-31-33, per Statement		\$479.07
Deduct Outstanding Checks:		
	No.	Am't.
	92	\$75.00
	93	62.50
	94	5.00
	95	14.55
		157.05
		\$322.02
<b>Total Cash in Banks, Exhibit "A"</b>		<b>\$388.18</b>

#### SCHEDULE A-2

##### Statement of Receipts by Months for Year Ended

Month	Dues	Medical Defense	Advertising	Interest on Investments	Payment on Principal of Investments	Miscellaneous	Total
Jan.	\$2,436	\$ 584	\$ 257.05			\$ 9.00	\$ 3,286.05
Feb.	1,030	274	298.38			22.70	1,625.08
March	632	126	243.14	150.00		5.50	1,156.64
April	652	134	358.55			258.50	1,403.05
May	192	2	434.70			184.35	813.05
June	120	2	194.01				316.01
July	48		270.72			2.00	320.72
Aug.	132		212.42	160.52	200.00	2.80	707.74
Sept.	184	2	278.14	150.00		20.00	634.14
Oct.	64	2	285.81	16.57*		38.00	406.38
Nov.	160		257.20				417.20
Dec.	252	24	410.11	83.74	83.79	9.00	862.64
<b>Totals</b>	<b>\$5,902</b>	<b>\$1,150</b>	<b>\$3,500.23</b>	<b>\$560.83</b>	<b>\$283.79</b>	<b>\$551.85</b>	<b>\$11,948.70</b>

\*Interest on Savings Account at Third National Bank.

#### SCHEDULE A-3

##### Statement of Medical Defense Fund for Year Ended December 31, 1933

Cash and Investments on Deposit, 1-1-33	\$ 956.88
Received from Members, Exhibit "A"	1,150.00
<b>Total</b>	<b>\$2,106.88</b>

##### DISBURSEMENTS

2-4 S. R. Miller—Clerical Work, Etc.	\$ 8.00
Cates-Smith & Long—Williams vs. Dr. Hodges, Dr. McLain, Dr. Newman	100.00
Adams, Donelson & Pope—Perry vs. Dr. Gartley	50.00
Adams, Donelson & Pope—Folbe vs. Dr. James	50.00
2-23 W. H. Blair, Clerk—Cooper vs. Dr. L. E. Trevathan	26.30
Vertie Nesbitt—Cooper vs. Dr. L. E. Trevathan	5.00
J. T. Peeler, Atty.—Cooper vs. Dr. L. E. Trevathan	125.00
2-28 Adams, Donelson & Pope—Williams vs. Dr. Bunting	75.00
Cornelius and McKinney—Keen vs. Dr. G. M. Allison	125.00
3-21 S. R. Miller—Clerical Work, Etc.	10.68
3-18 Wm. J. Cameron—Contribution Returned, due to Bank Holiday	16.00
5-25 Dr. A. A. Oliver—Refund of Dues	2.00
5-29 Thos. G. Hinson—Wm. P. Stribling vs. Dr. Gaston	100.00
Cornelius and McKinney—Keen vs. Dr. G. M. Allison	50.00
6-6 D. M. Woodward—Refund of Dues	2.00
7-1 Cornelius and McKinney—Milliken vs. Fentress	145.00
Cates, Smith & Long—King vs. Hodge	50.00
S. R. Miller—Clerical Work	7.50
7-27 Cates, Smith & Long—Willson vs. Drs. Lynn and Hodge	175.00
Adams, Donelson & Pope—Hill vs. Dr. Meyer	75.00
Adams, Donelson & Pope—Hill vs. Dr. Meyer	125.00
Adams, Donelson & Pope—Perry vs. Dr. Gartley	
9-25 Dr. Jno. P. Grisard—Refund of Dues to Dr. Kirvy	2.00

11-9 Dr. J. S. Hall—Refund of Dues for Dr. Kelly	\$ 2.00	
11-24 S. R. Miller—Clerical Work	7.50	
C. P. Hutcheson, Atty. Shubert vs. Dr. S. D. Davis	50.00	
Total Disbursements, Exhibit "A"	\$1,383.90	
Balance in Fund, 12-31-33	\$ 722.90	
Bills Payable for Services Rendered in 1933, but Unpaid at December 31, 1933:		
Adams, Donelson & Pope—J. A. Campbell vs. Dr. M. W. Holchan	75.00	
Adams, Donelson & Pope—Mrs. C. Huntley vs. Dr. M. B. Hendrix	50.00	
W. L. Swallows—Rupert Gentry vs. Dr. Z. L. Shipley	25.00	
S. R. Miller—Clerical Work and Supplies	10.50	
Pearson & Hewgley—Mrs. R. L. Stewart vs. Crook Sanatorium and Dr. R. K. Hollingsworth	106.25	
Cates, Smith & Long—Mrs. Maxey vs. Drs. Barry and Garvey	175.00	\$ 441.75
Balance Available for Unpaid Claims and Expenses		\$ 281.15

## SCHEDULE A-4

## Statement of General Fund for Year Ended December 31, 1933

Balance January 1, 1933:	
Cash (Deficit)	(\$769.12)

## RECEIPTS

Dues	\$ 5,902.00
Advertising	3,500.23
Interest on Investments	560.83
Cuts, Subscriptions, Etc.	141.95
Exhibition Space	374.00
Rent Refunds	20.90
History Sales	14.00
Census Sales	1.00

Total Receipts \$10,514.91

Balance \$ 9,745.79

## DISBURSEMENTS

Medical Journal:	
Printing (13,044 Copies)	\$1,801.00
Inserts and Reprints	53.50
Cuts and Halftones	249.35
Postage	184.00
Paid on Account	250.00
	\$ 2,537.85

Convention Expense:	
Reporting Service	\$ 418.06
Programs and Supplies	167.50
Addressing and Mailing Programs	22.40
Badges	41.85
	\$ 649.81

Salaries:	
Dr. H. H. Shoulders, Sec'y and Editor	\$1,500.00
Dr. Wm. Hardy, Asst. Sec'y and Editor	1,875.00
Miss Willard Batey	1,562.50
Dr. J. O. Manier, Treas.	100.00
	\$ 5,037.50

General Expenses and Other Disbursements:	
Expenses of Delegates to A. M. A. Convention	\$ 186.83
Expenses of Trustees Meeting	171.55
Rent	696.06*
Comm. Meeting Expense	30.00
Stationery, Printing, Etc.	143.32
Postage	131.00
Legal and Auditing	365.00
Refund of Dues	36.00
Bond for Dr. Manier	25.00
Press Clipping Service	36.00
Telephone and Telegraph	169.15
Rent for Safety Deposit Box	3.30
Insurance	6.50
Light	35.24
Check Tax	3.50
Miscellaneous	100.29
	\$ 2,139.14
Total Disbursements	\$10,364.30
(Deficit) Forward	(\$618.51)

Bills Incurred During 1933, but Unpaid as of December 31, 1933:

Medical Journal:	
Printing (7,225 Copies)	\$ 900.00
Inserts and Reprints	67.94

\*Includes December, 1932, Rent, \$65.76.

Cuts and Halftones	\$ 21.50
Postage	92.00
	\$1,081.44
Less Amount Paid on Account	250.00
	\$ 831.44
General Expenses:	
Stationery and Printing and Supplies	\$ 98.55
Miscellaneous	2.00
	\$ 100.55
Total	\$ 931.99
Total Operating (Deficit) in General Fund at December 31, 1933	(\$1,550.50)

## SCHEDULE A-5

## Statement of Investment Account as at December 31, 1933

Maker	Dated	Dur	Balance 1-1-33	Payments	Balance 12-31-33
S. H. Dillard and Wife (a)	6-1-29	6-1-32	\$2,500.00	\$100.00	\$2,400.00
T. H. Hails, Jr. and Wife	9-1-31	9-1-36	5,000.00		5,000.00
J. H. Horn and Wife (b)	6-1-29	6-1-32	2,500.00	183.79	2,316.21
Total Investments, 12-31-33					\$9,716.21
(a) Extended to December 1, 1936.					
(b) Extended to June 1, 1935.					

DR. J. O. MANIER: This is the report of the Board of Trustees:

## REPORT OF BOARD OF TRUSTEES FOR YEAR ENDING DECEMBER 31, 1933

To the House of Delegates of the Tennessee State Medical Association:

The regular semiannual meeting of the Board of Trustees was held on Friday, November 17, 1933, at the Andrew Johnson Hotel, Knoxville, Tenn.

The following members of the Board were present: Dr. J. O. Manier, chairman, Nashville; Dr. W. P. Wood, Knoxville; Dr. E. R. Zemp, Knoxville; Dr. Ralph H. Monger, Knoxville; Dr. W. L. Williamson, Memphis; Dr. H. H. Shoulders, Nashville.

Dr. H. B. Everett, president of the State Medical Association, was also present as a guest of the Board.

A tentative draft of an Act to reorganize the Department of Health creating a Board of Health was presented for the consideration of the Board of Trustees. This Act or Bill had been drawn by Mr. Chas. Cornelius, an attorney of Nashville, who had served in an advisory capacity to the Tennessee State Medical Association during the 1933 Legislative Session, in conjunction with Dr. W. C. Dixon, chairman of the Liaison Committee, and Dr. H. M. Tigert, chairman of the Legislative Committee. Both Doctors Dixon and Tigert felt that this bill should be considered and discussed by the Board of Trustees and reported to this House of Delegates by Board of Trustees for action one way or another rather than through the usual channels such as the Liaison or Legislative Committees. The reason expressed for this departure from the ordinary routine was that the Board of Trustees was the only committee which would have the opportunity to meet and actually discuss the proposed bill prior to the 1934 meeting of the State Asso-



ciation. For these reasons the Board of Trustees accepted the responsibility, and after thoroughly considering and discussing every angle of the proposed Act, the Board went on record as endorsing the bill as drawn and as recommending that this House of Delegates likewise approve this bill in its entirety. In brief the Bill represents almost the exact one that was finally before the 1933 Session of the Legislature. The proposed Act is as follows:

AN ACT to reorganize the Department of Public Health; creating a Board of Health; prescribing the method of election and powers of the Commissioner of Public Health; and repealing Section 328 of the Code of Tennessee.

SECTION 1. BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF TENNESSEE, That Section 328 of the Code of Tennessee be and the same is hereby repealed.

SECTION 2. BE IT FURTHER ENACTED. That the Governor shall appoint a board to be known as the Board of Health to serve without compensation. This Board shall consist of nine members, of whom six shall be licensed practitioners of medicine, one a licensed practitioner of dentistry, one a licensed pharmacist, and one a member of the Tennessee Congress of Parents and Teachers and the Tennessee Federation of Women's Clubs. Two of the medical members of said Board of Health shall be elected from each grand division of the State.

The medical members of said Board shall be appointed by the Governor from a list of six from each grand division of the State, certified to the Governor by the House of Delegates of the Tennessee State Medical Association. One dentist member of said Board shall be appointed by the Governor from a list of three certified to him by the Tennessee State Dental Association. One pharmacist member shall be appointed by the Governor from a list of three certified to him by the Tennessee Pharmaceutical Association. The member of the Tennessee Congress of Parents and Teachers and the Tennessee Federation of Women's Clubs shall be appointed by the Governor from a list of three nominations certified to him by joint action of the Executive Committees of these two aforesaid organizations.

In making appointments to membership on said Board of Health as aforesaid the Governor shall designate the term of each of the respective members of said Board at from one to three years, so as to provide for the expiration of the term of three of the members of said Board each year from and after the effective date of this Act, and the appointment, each year, of three successor members of said Board whose terms of office shall be three years from the date of appointment. Each successor member of said Board, or member named to fill a vacancy shall be appointed from a list of not less than three persons certified by the State Medical Association, the State Dental Association, the Tennessee Pharmaceutical Association,

or the Tennessee Congress of Parents and Teachers and the Tennessee Federation of Women's Clubs, respectively, in the manner above set out.

SECTION 3. BE IT FURTHER ENACTED, That the Board of Health shall formulate the policies of the Department of Public Health, and supervise its activities.

SECTION 4. BE IT FURTHER ENACTED, That the Governor shall appoint a Commissioner of Health, who shall execute and administer the activities of the Department of Public Health under the supervision of the Board of Health. The term of office of said Commissioner of Health shall expire with the beginning of the term of the Governor next elected.

SECTION 5. BE IT FURTHER ENACTED, That the Board of Health shall meet as soon as practicable after appointment, and semiannually thereafter, on dates to be fixed by the Board. The Board shall annually elect a President and Vice-President from its own membership, and the Commissioner of Public Health shall serve as secretary of said Board. Special meetings shall be held from time to time on the call of the President, or of a majority of the members. Six members shall be necessary to constitute a quorum at any regular or special meeting, and the action of a majority of all existing members of the Board shall be the action of the Board. The necessary expense of members incurred in the attendance at any regular or special meeting of the Board shall be paid by the Treasurer of the State, on the warrant of the Comptroller, when certified by the Commissioner of Public Health.

SECTION 6. BE IT FURTHER ENACTED, That all laws and parts of laws in conflict with this Act be and the same are hereby repealed.

SECTION 7. BE IT FURTHER ENACTED, That this Act take effect from and after its passage, the public welfare requiring it.

It will be recalled by many of you that toward the end of the 1933 Legislative Session our original Board of Health bill was amended so that instead of providing for a board of six doctors and one dentist, and giving to this Board the power of election of the Commissioner of Health, it provided for six doctors, one dentist, one pharmacist, and one woman member, and gave to the Governor the power to appoint a Commissioner of Health as in the past.

Your Board has felt that it was politically wise to endorse a bill presenting these concessions at this time in view of the fact that such a compromise should serve to do away with much of the criticism from certain sources against our original bill, and at the same time would leave the medical and dental professions a definite majority of control in membership on the Board.

In considering the possibility of passing this bill at the next session of Legislature, your Board has felt that it is absolutely essential that all can-

didates for the Legislature, as well as all candidates for Governor, be contacted, and, if possible, pledged to support the bill prior to the primary which will be held in the next few months of this year.

Past experience in the Legislative session for 1933 showed beyond question that it will be necessary from time to time to ask different members of the Association to come to Nashville to aid in the passage of any projected bill, and it scarcely seems fair to ask such a member not only to give his time, but also to pay his own traveling expenses.

The Board also went on record as wishing to advise this body to pass such resolutions as may be necessary to authorize its Legislative Committee to make such compromises in bills appearing before the Legislature as may seem fit and expedient from time to time provided such changes do not alter the real objective and spirit of the bills in question. Such action as this would certainly make much easier and more effective the work of our Legislative Committee as oftentimes it finds itself, after its legislation has been introduced and is pending, faced with a problem of being urged to accept certain minor compromises and yet without actual authority to do so. This situation was clearly exemplified during the last Legislative Session when pressure was brought to bear on the Liaison and Legislative Committees to modify the personnel provided in our original Board of Health bill. With such authority from the House of Delegates as is suggested for the Legislative Committee, without question this committee could function much more efficiently.

Your Board of Trustees desires to present the following amendment to Chapter VIII, Section III, of the By-Laws of the Association:

Section III. The Committee on Public Policy and Legislation shall consist of seven members, five to be appointed by the President, and the President and Secretary. The appointive members shall be from each grand division of the State, but so located as to residence that three will reside in Middle Tennessee. They shall serve for a period of five years, excepting the committee first appointed. The members of the first committee will be appointed for a period of from one to five years, the President designating the term for which each is appointed. They will be so appointed that one vacancy occurs each year and one new member is appointed each year to serve for a term of five years. Under the direction of the House of Delegates, it shall represent the Association in securing and enforcing legislation in the interest of the public health and of scientific medicine. It shall keep in touch with professional and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people, and shall utilize every organized influence of the profession to promote the general influence in local, state, and national affairs and elections. Its work

shall be done with the dignity becoming a great profession, and with that wisdom which shall make effective its power and influence. It shall have authority to be heard before the entire Association upon questions of great concern at such times as may be arranged during the Annual Session.

The occasion for presenting this amendment is almost self-evident. In the past our Legislative Committees have been appointed for a period of only one year, which, in many instances, meant that by the time a member became acquainted with his duties he passed out of office.

In view of the fact that in the future it seems that the socialistic trend of legislation toward medicine will of necessity require more and more thought and judgment on the part of your Legislative Committee, it has been deemed wise to have the membership of this committee serve for longer than the one year and to only have one member retire each year.

The Secretary's report setting out the financial trend of the Association during the latter part of 1933 was heard and approved. In this report it was shown that despite a year of unprecedented depression, the general fund had sustained only a slight loss, but on the other hand, the Medical Defense Fund had continued to show a decrease in its assets as compared to its liabilities.

The details of the actual finances of these two funds are fully covered in the Auditor's report for 1933, and will not be considered further in this report.

At the 1933 meeting in Nashville, this body adopted a resolution empowering and instructing the Board of Trustees to review all the phases of the present status of the Medical Defense Fund and restrict liabilities to such bases that there will be no further increase in the deficit of this fund and from time to time to make such changes as conditions demand, even to the extent of liquidation at the end of the year, if necessary, and such requests to the House of Delegates for their official action as they may deem wise.

In keeping with this motion the Board of Trustees at its meeting immediately after adjournment of the State Association meeting in 1933, after a thorough discussion of the Medical Defense situation, went on record as directing the Secretary to refuse to accept further medical defense dues for the year 1933, and also stated that their final action on the Medical Defense Fund would be taken at the semiannual meeting in the fall of 1933.

This action was taken with the idea in mind of allowing another six months to pass in order to determine more clearly just what the status of the Defense Fund might be at that time. It was felt that in view of the fact that on April 13, 1933, some 1,156 members had paid their state society dues, and of this number only 554 had paid medical defense dues that practically no assets could be hoped to accrue to the Medical Defense



Fund by continuing to accept membership for the remainder of the year 1933.

This judgment is validated by the fact that there were only 1,434 paid-up members to the State Society for 1933, and if the same ratio had pertained of members taking advantage of medical defense who might have paid dues after April 13, as did exist in those paying dues prior to April 13, the Defense Fund would have only increased by 130 members.

At the meeting in Knoxville in November the assets of the Medical Defense Fund had decreased nearly 25 per cent, as compared to their assets as of December 31, 1932, while there still was pending against the Fund the liability of twenty-eight potential suits.

Wishing to be fair in every sense to the Medical Defense Fund your Board of Trustees, after much consideration and discussion, adopted the following resolutions in relation to the Defense Fund, subject to the approval of this body at its present meeting:

"It is moved that defense dues for the year 1934 be accepted at the rate of \$2.00 per year, and that the Defense Committee be instructed to furnish defense, that is, attorney's fees, for one trial in a lower court, provided defendant gives his full cooperation. In the event the defendant does not give full cooperation in his defense the Committee is released from further liability.

"Be it further resolved, That a voluntary non-suit by the plaintiff after trial is begun will be considered as a trial.

"Be it resolved, That it is the judgment of the Board of Trustees that unless 51 per cent of the members have paid defense dues by the time of the next annual meeting that the acceptance of defense dues thereafter be discontinued.

"That the Treasurer be authorized to loan to the Defense Committee from the General Fund of the Association such an amount as necessary to meet its obligations until the next meeting of the Association.

"That the Treasurer be authorized, if necessary, to sell securities, or to place the securities of the Association as collateral, for a temporary loan to meet the expenses and obligations of the Association until the next meeting."

The Board of Trustees reviewed carefully a communication from the Liaison Committee covering in great detail certain charges and complaints made by members of the Madison County Medical Society against activities of the State Health Department in Madison County. These complaints had reference to the indiscriminate taking of X-ray pictures by a so-called "case-finding unit" of the State Health Department without respect to the financial status of those X-rayed.

Your Board unanimously and heartily approved the opinion and sentiments expressed by the Liaison Committee in the following respects:

First, that members of the Madison County Medical Society were entirely justified in their complaint, and that the State Health Department on

its part had offered no evidence to controvert the charges made.

Second, that the Liaison Committee was entirely correct in its attitude toward the so-called Advisory Council of Health in that this council could not be accepted as representing the sentiments of the organized profession of Tennessee in that its members were entirely appointed by the Governor, apparently on recommendation by the Commissioner of Health, and that the State Society had no authority or control over such a Board, owing to the fact that its membership did not come from names nominated to the Governor by this body.

Third, that the Liaison Committee was correct in its contention that the existing Council of Health was by law purely advisory, had no power to initiate nor formulate regulations nor policies, and hence could not be considered as being able to commit the Department of Health on any controversial question.

Fourth, that the Board of Trustees considered as socialistic and tending toward state medicine the Commissioner of Health's final reply to the Liaison Committee that his case-finding units were instructed to furnish X-ray service, etc., "to any and all citizens of the State of Tennessee who might apply for such service, irrespective of their financial status."

A tentative draft of a plan by which the organized profession of Tennessee could render medical service to indigent persons on the rolls of Federal Relief Administration was read and discussed.

A tentative plan was endorsed in principle with the provision, first, that such adoption should not in any sense interfere with each individual county making its own trade with the Federal Relief Administration so far as fee schedules and other such things were concerned, and second, that the medical profession reserve to itself the right to determine at any time when the emergency justifying such a procedure ceases to exist.

The question of unethical practices by institutions was raised, and after discussion the following resolution was adopted:

The Board of Trustees has taken notice of the report of an action taken by the Philadelphia County Medical Society which was reported in the Pennsylvania Medical Journal, Volume XXXVI, June, 1933, page 722, concerning dispensary abuses and social service departments.

The Philadelphia County Medical Society is taking steps to classify hospitals and allied institutions according to their ethical practices.

It is further taking steps to prohibit members of the society from contributing their services in any way to those institutions which are guilty of unethical practices under penalty of expulsion from the society.

The society further requests the Council on Medical Education and Hospitals of the American Medical Association not to approve for internship hospitals which are adjudged unethical by the local medical society in which they are located.

The Board voices its endorsements of these actions taken and expresses a desire that the House of Delegates of the Tennessee State Medical Association take action to instruct its delegates to the American Medical Association to support and vote for a movement, the purpose of which is to classify institutions according to their ethical practices as ethical or unethical, and to withhold or withdraw the approval of the Council for internship from such institutions as are adjudged unethical in practice by the local medical society of the locality in which they are located.

At a special meeting of the Board of Trustees called at the request of our President, Dr. H. B. Everett, on January 14, 1934, the entire membership of the Board was present. This meeting was called to consider the fee schedule tentatively suggested in relation to Federal Emergency Relief work. After much discussion the following resolution was introduced and adopted:

"It is moved that the Board of Trustees of the Tennessee State Medical Association petition the director of the Federal Relief Administration in Tennessee to revise the fee schedule which applies to doctors furnishing medical service to indigent persons under the Federal Relief Administration to the end that the schedule will be in harmony with the schedule in effect in the state of New Jersey."

This schedule in effect has the following provisions:

(1) The schedule is set by each county on the basis of from one-half to two-thirds of the customary charge for services rendered.

(2) The schedule in effect in nearly all New Jersey counties is \$1.00 for office visit and \$2.00 for house visit within two miles.

Respectfully submitted,

J. O. MANIER, M.D., Chairman.

The audit report and the report of the Board of Trustees were referred to the Committee on Reports of Officers.

#### REPORT OF THE SECRETARY-EDITOR FOR THE CALENDAR YEAR, 1933

Secretary-Editor Shoulders read his report.

*To the House of Delegates of the Tennessee State Medical Association:*

I have the honor to submit herewith a brief summary of the activities of the headquarters office for the calendar year 1933.

##### Membership

At the end of 1933 the membership of the Association was 1,434. This is sixty less than the number for 1932.

##### Local Societies

There were fifty-nine active societies during the year, embracing sixty-eight counties.

We find it necessary again to report to this House the desirability, if not the urgent necessity, for the

combination of small county units in such numbers as will result in the formation of about twenty-five larger units. This step is urgently necessary for several reasons: First, an improvement in the scientific work of the society is noted immediately the number of members is increased. Second, it is necessary for the purpose of carrying on post-graduate work in rural communities.

It is generally agreed among statesmen that the number of counties in the various southern states constitutes a handicap to the efficiency of governmental administration.

We have no recommendations to make to the House other than that suitable action be taken to instruct councilors in their various councilor districts to make such an activity a part of their duties. These particular organization activities are of necessity a part of the councilor's duty.

##### Journal

Every issue of the JOURNAL was mailed on time. You are familiar with the quality of its contents. It is not necessary to dwell on this.

##### Finances

The financial activities of the Association are portrayed in an audit which will be presented by the Treasurer. Some items in the audit, however, should be touched upon by me. It is not necessary for me to tell the members of this House that we have experienced a serious depression.

The gross income of the Association was \$10,514.91; \$5,902.00 of this gross was from dues.

It will be observed that almost one-half the income of the Association is derived from sources other than from membership dues. I shall again mention the fact that this Association is operated on less dues than any other association in the United States which publishes a journal.

It should also be mentioned that we are faced with one of two alternatives in the very near future. One alternative is the curtailment of the activities. The other alternative is the increase in membership dues.

In thinking over the activities which might be curtailed we can find none. The facts are that our activities should be increased. The expenses of the Association have been reduced in several respects, but the expenses have been increased in other respects.

Nineteen hundred and thirty-three was a legislative year. There were several meetings of the Board of Trustees. Their expenses were paid. There was an excessive amount of printing and postage. Press clipping service was very necessary.

I mention these items of expense to show something of the expenditures that are necessary in conducting a campaign for legislation, and even at that our expenses were exceedingly small as compared with those of other organizations.

Roughly, our expenses were \$10,364.30. Some bills contracted in 1933 were not paid until 1934,



namely, some printing bills of the JOURNAL which when added make an operating deficit of \$1,550.50. To be deducted from this deficit are bills outstanding, collectable but not paid—also are bills contracted in 1932 and paid for in 1933. When these deductions and additions are made our disbursements exceeded our receipts by \$351.06.

In my humble judgment, we should be gratified that we have not operated with a larger deficit because every source of income to every form of business has been reduced in 1933.

#### The Medical Defense Fund

This fund is handled in our office only to the extent of receiving for payment and keeping a proper accounting of funds.

The House of Delegates clothed the Board of Trustees with specific power last year with reference to this fund, and the activity of the Board in respect thereto will be reported to you by the Chairman of the Board of Trustees.

#### General Conditions

In the last few years the duties of the office of Secretary-Editor have multiplied enormously. Of necessity the headquarters office is the clearing house of many of the activities of the Association.

It is the duty of the office to keep in touch, in so far as is possible, with the activities inimicable to medicine. These duties, together with conferences and correspondence pertaining to them, have multiplied enormously. We have accepted it as a part of our task. With reference to these matters we must either fight or not fight. There is no middle ground.

Conditions incident to the depression and incident to communistic tendencies are becoming increasingly apparent. It is necessary that our medical organization be kept alive, active and informed. It is necessary that we fight. It is necessary that we have the sinews with which to fight. We are now finding it necessary to combat the influence of well financed foundations, in addition to other well financed agencies, political in character, which have destructive tendencies.

It may be that I am more impressed with the seriousness of the situation which confronts us than many of you are by reason of the fact that so much information on the subject comes to my desk, but I would like to impress upon you that I am not making an idle assertion when I say that medicine in America, as we know it, is gravely threatened. We must either fight or join the communistic procession. As for me, from instinct and from judgment, I feel compelled to fight, and I feel that for medicine to win we must fight as a unit.

When we discover cowards, slackers or spies in our own ranks, they should be dealt with less mercy than would be shown a misguided layman.

We all know there are enemies in our ranks. The time is fast approaching when they must be effectively dealt with.

A division of opinion among our own membership was an alleged cause of a legislative defeat last year. There was no real division of opinion among the rank and file. There were a few disloyals who helped to bring about that unhappy ending.

I wish I knew how to say the word that would stimulate each of you to go back to your respective communities with a high resolve to keep America free from the communistic influences which are today paraded in the disguise of child welfare, charity, social welfare, etc.

We register no opposition to any logical well planned social welfare movement or child welfare movement. The facts are that human welfare is our daily business.

I repeat, I wish I could utter the phrase that would stimulate each of you to use all the force that is within you to perfect organized medicine into what we may call a combatant unit to combat all the enemies of American freedom.

Respectfully submitted,

H. H. SHOULDERS, M.D.,

Secretary-Editor.

April 10, 1934.

The report of Secretary-Editor Shoulders was referred to the Committee on Reports of Officers

#### REPORTS OF STANDING COMMITTEES

##### Committee on Scientific Work

Secretary Shoulders filed with the House the program which constituted the activities of the committee.

##### Advisory Committee to the Woman's Auxiliary

DR. C. M. HAMILTON, Nashville: We have no special report to make. We have been rather inactive. We are supposed to act in an advisory capacity, and they did not ask us to advise.

##### Committee on Medical Education

SECRETARY SHOULDERS: Last Sunday the members of this Committee met, and they reported that none of them would be here and asked me to read their report.

#### REPORT OF COMMITTEE ON MEDICAL EDUCATION

Your Committee has no report to make except as pertains to Postgraduate Instruction. It has given considerable thought to the question of Postgraduate Instruction to be offered to the physicians throughout the state. In other states such a program has served to promote the public health and has made for a more efficient service to the sick.

Your Committee believes that through the voluntary offer of services of a selected body of Internists, Surgeons, and Specialists medical instruction can be carried to counties or groups of counties, and that the results obtained will redound to the credit of this Association.

Your Committee feels that through lack of familiarity with those phases of preventive methods that have been worked out in the last decade or so, much of the work of prevention has been lost to the practitioner and has become a function of the state. We feel that a course of instruction in such methods would restore this service to its proper place. We recommend that a committee be appointed to work out the details of such a plan and, so far as possible, put it into execution before our next meeting.

OTIS WARR, M.D., Chairman.

Report referred to Committee on Reports of Committees.

#### State Tuberculosis Hospital Commission

Dr. William S. Rude, Ridgeway, read the report of the State Tuberculosis Hospital Commission.

April 3, 1934.

*Dr. H. R. Everett, President, Tennessee State Medical Association.*

DEAR SIR:

While the State Tuberculosis Hospital Committee of the Tennessee State Medical Association has been unable to get together in a meeting, there has been sufficient correspondence to enable the Committee to formulate a report.

We, your Committee, feel that the difficulties of the present time and uncertainties of the immediate future make it very hard to organize a plan of such magnitude as a state plan for tuberculosis hospitalization would be. We feel, moreover, that any such plan can be better made and executed after times shall have become somewhat more normal.

We recommend, therefore, that the Tennessee State Medical Association not take up the matter at the 1934 meeting in Chattanooga.

J. B. NAIVE, Chairman.

Referred to the Committee on Reports of Committees.

#### Cancer Committee

DR. W. B. BURNS, Memphis, Chairman: We have not been able to get in touch with the eastern portion of the state as yet, but you will see from the exercises outside the room that we are having some pretty good activities in the middle portion of Tennessee, that is, in this part of the state. I have not heard from the men at Nashville or Knoxville as yet.

Dr. J. R. Thompson had a good report, and he had a good program at Jackson in March. They showed thirty-six slides on cancer of the cervix, and made arrangements to have those seen by the neighboring towns. In Memphis we had this program last Tuesday night, April 3, on cancer of the cervix, and it was discussed by Dr. Black, who is on the Committee, Dr. Abernathy, Dr. McIntosh, and your humble servant, and several others also discussed the subject. It was very well put on,

and we showed the thirty-six slides on cancer of the cervix.

We have made arrangements to continue this service for a little while, but I do not know how long. I believe, with some considerable experience on the Committee on Cancer for the state society, that we have probably had just about as good a program as we have ever had.

I shall be glad to submit a complete written report as I can hear from the various members of the Committee.

#### The Medical Defense Committee

Dr. S. R. Miller, Knoxville, read the report of the Medical Defense Committee.

#### REPORT OF MEDICAL DEFENSE COMMITTEE

January 1, 1934.

*To the House of Delegates of the Tennessee State Medical Association.*

GENTLEMEN:

We submit herewith the twentieth annual report of your Medical Defense Committee's work for the year 1933.

There were on January 1 twenty suits on docket in circuit courts, and three in the higher courts.

One potential nonsuit was refiled. Four new suits were filed during the year. Two of these by the same plaintiff, and will probably be tried as one suit.

We therefore had twenty-eight suits at issue during the year in all courts. One was at issue in both the State Court and Federal Court, but some suits are being defended by the insurance company, and thus far we are not furnishing our counsel.

There were eight potential nonsuits on record.

#### Results of the Year

Three suits were won in the lower courts.

One was stricken from the docket by order of the judge.

Four took voluntary nonsuit.

One suit reported was actually not filed in court.

One was won in Court of Appeals.

One in Court of Appeals was abandoned by the plaintiff.

One was tried in Supreme Court, and remanded to lower court for retrial.

Two were compromised by the defendant's insurance company.

A verdict for the plaintiff was rendered in the Circuit Courts in three suits, \$10,000.00 in one, and a joint verdict of \$4,000.00 against two defendants. These three cases were appealed by our counsel.

Of the eight nonsuits, or potential suits, from the former year, one was refiled, and the time limit to refile has expired in two, and of the other five, we have assurance from our counsel that four will not be refiled, thus leaving only one potential non-



suit, if our counsel's prediction are 100 per cent dependable.

Therefore we have at issue, January 1, seven suits in the Circuit Courts.

One is pending in Federal Court.

Three in Court of Appeals, or eleven suits on hand, as compared with twenty-three shown in our last report.

Of the twenty-seven suits handled in the year, exclusive of the reported suit not really filed, twenty-three were filed on pauper's oath, and pauper's oath not filed in four suits, in two of which due to the fact that plaintiff was a non-resident, and could not file pauper's oath in this state.

At the last meeting of this House of Delegates, the policies and real management of the defense work was put in the hands of the Trustees. We have been ready to carry out any orders, or directions given by them. However, no special changes have been ordered.

The Treasurer's report showed a balance on December 31, 1933, of \$722.90, to take care of the eleven suits, and one potential nonsuit that has been taken twice thus far. Three or more suits are being defended by insurance companies. One suit is of seven years' standing, and we think will eventually be dropped without trial.

DR. S. R. MILLER, Chairman.

The report of the Medical Defense Committee was referred to the Committee on Reports of Committees.

Liaison Committee

Dr. W. C. Dixon, Nashville, read the report of the Liaison Committee.

#### REPORT OF THE LIAISON COMMITTEE TO THE HOUSE OF DELEGATES, 1934

In April, 1933, the Madison County Medical Association filed with the Liaison Committee a complaint as to the manner in which the State Health Department was conducting its Tubercular Clinics.

There was also filed at the same time by Dr. W. G. Saunders, of Jackson, Tenn., a statement showing that one of his patients able to pay for medical services, whom he had arranged to have X-rayed, had been taken over by the Health Department, without the courtesy of consulting Dr. Saunders. This patient was examined, and had an X-ray of the chest made.

The Liaison Committee presented the statements mentioned above to Dr. Bishop on June 8, 1933, and in the concluding paragraph of the letter of transmission made the following statement:

"The Liaison Committee would appreciate a written statement from you as to what steps, if any, you intend to take to correct this practice of your Department which we feel is wrong and unjustifiable."

Under date of June 10, 1933, Dr. Bishop replied in substance that he was having Dr. Crabtree, in

charge of the service in tuberculosis control, make a direct inquiry. On September 5, 1933, having had no reply from Dr. Bishop, the Liaison Committee again wrote him, as follows:

"The Liaison Committee would appreciate a statement from you with reference to this matter, and also as to whether it is your policy to continue extending such services to people who are able to pay for them."

On September 16, 1933, a reply was received from Dr. Bishop, quoting from a report he had received from Dr. Crabtree concerning the Madison County complaint, and making certain general observations of his own. He also said that the correspondence had been referred to the Advisory Council on Public Health.

On September 27, 1933, the Liaison Committee replied to this letter, and the concluding paragraphs were as follows:

"Nowhere in your letter do you answer the question asked in a previous communication from the Liaison Committee as to what steps, if any, you intend to take to correct this condition. You refer in the last paragraph of your letter to the Advisory Council. We are familiar with this Council and are aware that, as its name implies, it is purely advisory in character and that you are in no way bound to accept any advice which it may give. The profession of the state has no voice in the naming of this Council and we have the impression that its members are largely your personal selections. You are the responsible head of the Department of Health and the particular activity of that Department under discussion was instituted long before there was an Advisory Council, consequently we request an answer from you to our question as to what steps, if any, you intend to take to correct this activity of your Department."

On October 18, 1933, still having received no answer to the oft-repeated question, the Liaison Committee again wrote Dr. Bishop "asking for the courtesy of a reply to the request which we have made to you on several occasions beginning on June 8, 1933, as to what steps, if any, you intend to take concerning this matter. We feel that this is a fair question, and that four months is sufficiently long to wait for an answer." On October 27, 1933, Dr. Bishop replied. The following paragraph is quoted:

"I was under the impression that in a former letter I advised you of the discontinuance of all tuberculosis diagnostic clinics in Madison County or the fact that there would be no clinic service in other than counties with full-time health departments during the present biennium. This, of course, includes Madison County. I thought that this answered the question which you raised."

It must be apparent to any fair-minded person from this answer that Dr. Bishop had paid very little attention to the question asked, or else hesitated to give a specific reply.

On November 8, 1933, another letter was writ-

ten him, in which the question was repeated. "What steps, if any, do you intend to take concerning the practice of your Tubercular Clinics in examining all who apply, regardless of their economic status. We would like for this information to cover all the counties of the state, whether they have full-time health units or not."

At last Dr. Bishop made a specific reply covering the operation of these clinics, much of which need not be quoted. The information for which we had patiently waited is included in one line. "All residents of Tennessee irrespective of financial status are eligible."

It is our understanding that recently the Advisory Council of the Department of Health has made certain so-called revisions in the policies of the Department. One of these has to do with the Tuberculosis Clinics.

Section 328 of the Code of Tennessee (1932), which provides for this Council, reads as follows:

"The Governor may, in his discretion, appoint an unpaid Advisory Board, to be known as the Public Health Council, to serve in connection with the Department of Public Health. This Board shall consist of five members selected on account of their qualifications and experience in sanitary science and general health work."

You will recall that this law was passed in 1923, but no effort was made to have such a Council appointed until after the State Medical Association went on record at the Memphis meeting in 1932 advocating a Board of Health.

This Council is purely advisory in character and has no authority to revise or enforce any policy of the Department, consequently any action which it may take is not binding and may be changed at the discretion of the Commissioner of Health.

The fact that activities of the Department, which have been vigorously pursued for many years now require revision, shows that they should never have been instituted, and is a further argument for a Board of Health, clothed with authority to promulgate and carry out sound policies.

While no written complaint has been filed with the Liaison Committee concerning the activities of the Health Department in immunization, we have heard many doctors say that their patients had been educated to expect this service from the state, and that consequently they did very little of this type of work for their patrons.

We have been told in several counties that a representative of the Department of Health would meet with a county society and outline the plans of a County Health Unit. He would set forth what the unit would do, and what it would not do. Usually members of the society would apply to the County Court and obtain the necessary appropriations. Later another employee of the Department would arrive, take charge and soon be engaged in an extensive and indiscriminate campaign of immunization.

It must be evident that since this work has been

largely assumed by the Health Department and people have been educated to expect this service from the state, the number of protected persons is not as great as it might have been if the profession as a whole had been encouraged to assume and carry on this work. The recent increase of 28 per cent in the diphtheria death rate in this state is tragic proof of this statement.

The greatest protection to the public health of any community is an alert, interested profession applying those protective measures that are well established. This cannot be done, however, in competition with free services offered by the state.

The more we study the question of public health as it affects the welfare of the people, the more we become convinced that the proper function of a Department of Health should be largely educational. People should be educated as to the value of various measures and urged to carry them out.

Sanitary problems, quarantine measures, and matters in which the police powers of the state must be used are best handled by the Health Department.

The less the Department engages in the practice of medicine the better it is for the public. We feel that in the next session of the Legislature an effort should be made to pass a bill providing for a Board of Health composed largely of practicing physicians to direct the policies of the State Health Department.

We are convinced that this is to the best interest of the public, the Health Department, and the profession.

W. C. DIXON, M.D., Chairman.

The report of the Liaison Committee was referred to the Committee on Reports of Committees.

#### Hospital Committee

DR. E. T. NEWELL: I have a very brief report. We have had no meeting of the Committee, but we have had some correspondence. There has not been very much to do, as this is an off-legislative year.

#### REPORT OF HOSPITAL COMMITTEE

April 9, 1934.

GENTLEMEN:

As chairman of the Hospital Committee of the Tennessee State Medical Association, I have the following report to make:

There has been no regular meeting of the Committee during the year, but letters have been written to the various members: Dr. C. F. Anderson, Nashville; Dr. B. F. Hardin, Memphis; Dr. R. H. Newman, Knoxville; Dr. Chas. F. Webb, Jackson; Dr. F. J. Runyon, Clarksville; and Dr. J. D. Brewer, Dyersburg. Some of the members have discussed conditions in their territory with me with regard to the question of the small salaries and fees paid to operators of the Laboratory and X-ray Departments, which has been discussed in the House of Delegates of the American Medical Association.



I wish to state that investigations in lower East Tennessee reveal the fact that the physicians in charge of the Laboratory, X-ray, Serological, and Pathological Departments are well paid. The matter of the appointment of members of the local medical societies on the staffs of the approved hospitals has been investigated, and in East Tennessee the members of the local society are given preference on the staffs of the above-named institutions. The hospitals throughout the state have, as a rule, been compelled, on account of the depression, to close one or more floors. This includes private rooms as well as wards. They have all been forced to curtail the nursing forces, as well as the office, and ordinary help connected with the institutions.

I am glad to report that in Chattanooga and vicinity only one hospital has been forced to close its doors during this great depression, yet most of the hospitals have operated at a loss. By good business management and acumen they have been able to exist, and now that a ray of sunshine has forcibly penetrated the business horizon, I feel quite sure that there will be no more closures in this particular line of endeavor and the hospitals will gradually enlist up to their usual full strength.

Dr. B. F. Hardin, of Memphis, calls attention to the National Hospitalization System, Inc., that will for 90c per month permit a patient to go to any one of the designated hospitals and remain as long as twenty-three days without additional expense. Dr. Hardin fears that this is a very bad practice, and states that he is afraid that later on the hospital system will endeavor to employ doctors to take care of these patients. This is another form of the pernicious effect that has resulted from Dr. Ray Lyman Wilbur's committee "On the High Cost of Medical Care."

Dr. C. F. Anderson, of Nashville, has called to our attention that we should be on the lookout for legislation intended to put free State or Federal Hospitals in Tennessee, and to oppose any such action. The Hospital Committee next year should keep this in mind, as the legislature will be in session in 1935. This being an off-legislative year, the committee had very little to do in regard to proposed legislation concerning hospital legislative matters.

Respectfully submitted,

EDWARD T. NEWELL, M.D., Chairman.

The report of the Hospital Committee was referred to the Committee on Reports of Committees.

#### NOMINATING COMMITTEE

Speaker Zemp ordered a recess so that the delegates from the three divisions of the state could meet and elect their members of the Nominating Committee. When the House reconvened, the following had been named members of the Nominating Committee:

#### East Tennessee

Dr. L. E. Coolidge, Greeneville.  
Dr. Franklin B. Bogart, Chattanooga.  
Dr. R. H. Newman, Knoxville.

#### Middle Tennessee

Dr. Joseph Wright, Lynnville.  
Dr. W. H. Avery, Shelbyville.  
Dr. J. C. Pennington, Nashville.

#### West Tennessee

Dr. W. L. Williamson, Memphis.  
Dr. J. W. McClaran, Jackson.  
Dr. J. D. Brewer, Dyersburg.

In addition to the regular offices to be filled, Speaker Zemp instructed the Nominating Committee to name six men from each division of the state, from whom the Board of Health would be selected, provided a law creating a State Board of Health should be enacted.

#### REPORT OF THE COMMITTEE ON THE REPORT OF COMMITTEES

Dr. W. B. Burns, Memphis, chairman of the Committee on Reports of Committees, reported that his Committee had examined and approved the reports of the Committee on Medical Education, State Tuberculosis Hospital Commission, Medical Defense Committee, and Liaison Committee, and it was moved by Dr. E. T. Newell, Chattanooga, seconded, put to a vote, and carried, that the reports be adopted.

#### DR. LELAND'S ADDRESS

Dr. R. G. Leland, director, Bureau of Medical Economics, American Medical Association, Chicago, Ill., was then introduced and addressed the House.

DR. R. G. LELAND: Mr. Speaker, Members of the House of Delegates: It is a real pleasure for me to be here in Tennessee again. I appreciate very much your courtesy, your cordiality, your hospitality. I have enjoyed listening to your reports of Committees, and I can see that you here are alive to many of the important economic questions which are facing medicine today.

I wonder how many of you have read "Red Medicine." If you have not, I think it would be worth while for you to get a copy. "Red Medicine" was written by Sir Arthur Newsholme, of England, and Mr. John Adams Kingsbury, Secretary of the Milbank Memorial Fund, formerly Commissioner of Public Charities, City of New York, after a trip of some 9,000 miles, over a period of a little over a month, throughout the western and southwestern portions of Russia. Not being able to speak Russian, there were some difficulties, I presume, in getting the exact picture of Russian medicine. They make a great deal of excuses for perhaps seeing the best or being shown the best in Russia, but the book is written most interestingly, most intriguingly, most insidiously. You will read it, I believe, with a great deal of interest, but always remember the forces which prompted the writing of it.

It is difficult to think of a man of the standing of Sir Arthur Newsholme, a man who has been respected because of his interest and administrative ability in public health, lending himself to this type of literature. No doubt there may be a reason for his name appearing as a co-author.

Little is said about the exact quality of medical care. There is slight, if any, comparison between medicine in Russia of today and medicine in Russia before the revolution. But you will find repeatedly the pages filled with superlatives describing the type of medical institutions and the type of medical care. They spent an appreciable amount of time watching the dancers and the factories and agriculture and many other things not pertaining to medicine.

The reason I tell you this is because this is one source of insidious information, or propaganda, that is being passed out to influence the public for a change in medical practice in this country. Your members who made reports to you today are quite correct in sounding to you a warning to be on the alert and constantly watchful for any effort that will be made to socialize medicine.

I take it from some of the reports that I have heard that you may be having a little difficulty on some health matters in Tennessee. I think we must face these matters squarely. I can see no good reason for making such sacrifices, or such compromises, that we gain no ground.

Actually, departments of health are not licensed to practice medicine. They have a very definite legitimate and necessary place in the community. Properly conceived and properly supported, they can do much for the benefit of the community, for the promotion of the right kind of medicine, but improperly conceived, improperly administered, I can see many opportunities for misunderstandings. I speak not from a mere theoretical acquaintance with public health. I have personally been in public health for about twelve years, before taking over the work I am doing now, and I believe I know something about public health. Prior to that I was a practicing physician, and I am familiar with the problems of active practice. I believe that we must recognize the fact that in some instances (and I am not speaking specifically of any instance in your state) there may be some fault on both sides. I believe that in many instances we can find health officials who have a vision of something that ought to be done—who can see beyond the individual patient to the mass control of a certain infection—and who are impatient and anxious to see action. Let us grant that that is a laudable ambition, and that the means for accomplishing that are altogether worthy and should be supported. But let us examine the other side. There are some places in these United States where the medical profession, unfortunately, has resisted unduly the necessary measures that ought to be a part of the everyday practice of medicine. There are many things which health departments suggest, and some things which

health departments are doing, that ought to be incorporated in the everyday practice of medicine by the general practitioner, and the specialist as well. Dr. Vaughn will tell you tonight perhaps a happy compromise has been accomplished in one city in these United States. He will tell you how some of the work of the Health Department *can* be turned back, and *ought* to be turned back, to the private practitioner of medicine. But in the face of emergencies which sometimes come to communities (and none of us are immune to all of these dangers), if the practicing profession refuses or fails to do those things which are their legitimate field in the practice of medicine, and which perhaps temporarily are fostered and are being done by health officials, then I think the medical profession has much less ground to criticize the health officials if they proceed with the work which they believe is necessary.

The morbidity and mortality from various diseases cannot be reduced in the brief period of a few weeks or a few months. It must be a gradual cumulative process, over the period of years or generations. It occurs to me that we as physicians and health commissioners—say, the protectors of the public health—may well unite on a dispassionate, unbiased, unprejudiced, non-preconceived basis for a long-time program. We cannot accomplish a great deal by flashes which have a momentary spurt and long, drawn-out lags or dips. I believe it is possible in practically every community for health work and the practice of medicine to be so adjusted that the welfare of the community will be safeguarded and improved.

Reference was made in one report to a group hospitalization concern known as the National Hospitalization Corporation. If I am correct, I believe that is a concern with its home office in Dallas, Texas. Your Committee was absolutely correct in presuming that, as soon as this company succeeds in securing a sufficiently large section of the medical market, it will add medical service to hospital care.

I was in the office of Mr. Wheeler, who is the originator and the promoter of this plan, if it is the one I believe it is, and Mr. Wheeler told me himself that, as soon as the company became sufficiently strong, they intended to add medical service to hospital care.

Those new forms of medical practice, organized by laymen, controlled by laymen, for a profit (because the services which they sell are necessary and are easily sold), must use the services of physicians, and these physicians take what they can get by way of remuneration. The group hospitalization plan, divorced from all medical services, is quite another question. I am not so sure that group hospitalization may not be considered at the meeting of the American Medical Association in Cleveland in June. However, as yet we have not endorsed officially any of these plans for group hospitalization or for the sale of medical care on a monthly prepayment plan.



All of these questions which you have had presented to you are important ones. They are of sufficient concern to each one of you that it is not enough for you to consider them here in your House of Delegates, marvel, perhaps, at the way in which medicine is traveling, be surprised at unusual things which happen now and then in different parts of the country, and condone each other on one thing or another of the bad features of these new schemes. It is for you to do more than that. The action which is necessary is that action which you see through to the end. It must be well conceived, and well considered, not hastily done.

We have a large amount of information at the Bureau of Medical Economics in Chicago, I presume the largest amount of information on many phases of medical economics that there is in the country. That information is for your use. The Bureau of Medical Economics is your Bureau, and we welcome any opportunity to give you any information that we can.

We cannot answer all questions pertaining to medical economics. We have no ready-made prescription that we can write, and that you can fill, that will cure all the ills of the economic phase of medicine. It is impossible for us to devise a plan that will operate in New York, in Tennessee, in Texas, in Montana, in Florida, and in Washington. But we have endeavored to set forth certain principles which we have called an introduction to medical economics, in which we have attempted to set forth the principles which underlie medicine as contrasted with those economic principles which govern the operation of industry, commerce, and business. We believe that the establishment of principles on all of these subjects is the first step that must be taken. Actions must follow the establishment of accepted principles.

In that respect I wish that sometime within the not far distant future we might take a greater interest in our on-coming generations of physicians to the extent that at least the principles of medical economics might be taught in medical schools.

I look back at the time when I was in college, and I am sure that many of you will agree that there was then a striking lack of information concerning the manner in which medicine was to be practiced.

There are many things which we can and ought to tell the students in our medical colleges today. Perhaps some readjustment of schedules or curricula may be necessary, but it seems to me that medical economics ought to be taught not so much as a specific segregated course, but as a phase of medicine which should be interpreted in its application in every part of medical teaching.

There is an opportune time to discuss the prevention of diphtheria. There is an opportune time to discuss sanitation, typhoid fever, and other things. Likewise there ought to be an opportune time to discuss not only the ethics of medicine, but the economics of medicine. And I am sure that, visiting, as I do, many medical society meetings

such as this, I get a great deal of courage, a great deal of optimism over the future of medicine, because by and large I am sure that the practice of medicine today is in good hands, and that is where it must be kept.

Thank you. (Applause.)

#### RESOLUTIONS PRESENTED

Dr. Battle Malone, Memphis, was then recognized and addressed the House, as follows:

DR. BATTLE MALONE, Memphis: There are some matters which I think should have been presented by the Legislative Committee, but they have not presented a report.

As all of you know, the State Board of Medical Examiners is now named by the Governor. He alone has the say as to who shall be on our State Board of Medical Examiners. Without any intended criticism of the present Board, I think that this body, the State Medical Association, should have some voice in naming the State Board of Medical Examiners. Therefore, I wish to introduce this resolution, Mr. Speaker:

"Resolved, That the Legislative Committee be instructed to attempt to secure an amendment to the present law controlling the appointment of the State Board of Medical Examiners to provide and require that the Governor shall appoint a member of this Board from a list of five members (if the Committee thinks best to make it three, or some other number, that is all right) of the State Medical Association to be nominated from time to time as vacancies occur by this House of Delegates."

There is another matter that I wish to bring before you, which has to do with the control of irregulars in the state. We have chiropractors, osteopaths, and all the other kinds of "paths," and a method has been found in other states to control new members of these irregular cults coming into the states known as the Basic Science Law. I do not know in how many states it has been passed. In some states it has been introduced, but failed to pass. It was recently passed in the State of Arkansas.

The Basic Science Law means that everyone who comes into any of the cults, or any of the medical professions, shall have a knowledge of the sciences of anatomy, physiology, chemistry, bacteriology, and pathology.

In this state we have different boards of examiners. The chiropractors are examined by one board, the regular practitioners by another, and so on. The regular practitioners have this training. If these others continue to come in, they should have this training. So I wish to offer this resolution, Mr. Speaker:

"Resolved, That the Legislative Committee be instructed to ask the next Legislature to enact a law requiring that every applicant for license to practice the art of healing shall be required to pass an examination on the basic sciences of medicine."

**SPEAKER ZEMP:** The resolutions presented by Dr. Malone will be referred to the Committee on Resolutions.

The meeting adjourned at four-ten o'clock.

### HOUSE OF DELEGATES

Wednesday Morning, April 11, 1934

The meeting convened at 8:40 A.M., with Speaker Zemp presiding.

Dr. H. H. Shoulders presented the Speaker of the House of Delegates a gavel, a gift from President H. B. Everett.

### COUNCILORS' REPORTS

The Councilors reported the following conditions in their districts. Statistical reports from most of the counties are tabulated in Table I.

Table I

COUNTY and DISTRICT	Members in County	Physicians in County	Eligible Non-Members	New Members	Died during 1933	Dropped N. P. D.	Society Meetings	Average Attendance	Papers Read
<b>FIRST DISTRICT</b>									
No Reports									
<b>SECOND DISTRICT</b>									
Anderson	10	16	2	1	0	12	5	12	
Blount	26	32	4	3	0	0	51	15	42
Campbell	20	27	7	2	1	2	12	12	14
Loudon	3	9	6	0	1	0	0	0	0
Knox	138	150	5	12	1	4	47	58	48
Roane	12	21	9	1	0	1	12	6.5	14
<b>THIRD DISTRICT</b>									
Bradley	14	17	3	1	0	0	12	8	12
Hamilton	114	163*	6	2	1	14	44	39	52
McMinn	17	21	7	0	0	2	12	13	16
Polk	8	11	3	1	0	0	4	4	0
White	14	16	2	0	0	1	10	8	7
<b>FOURTH DISTRICT</b>									
Jackson	4	7	3	0	0	2	2	3	0
<b>FIFTH DISTRICT</b>									
Bedford	11	13	5	1	0	0	12	8	12
Lincoln	13	21	7	1	0	0	5	8	0
Rutherford	18	25	6	1	1	0	10	15	10
<b>SIXTH DISTRICT</b>									
No Reports									
<b>SEVENTH DISTRICT</b>									
Dickson	5	13	7	0	0	0	1	4	0
Hickman	4	5	1	0	0	0	1	4	0
Maury	18	30	12	1	0	12	10	11	6
Williamson	14	22	5	2	0	2†	9	10	8
Humphreys	11	14	3	1	0	0	1	4	0
Five Counties	25	16	8	1	0	3	11	20	44
<b>EIGHTH DISTRICT</b>									
Fayette-Hardeman	15	30	15	15	0	0	0‡	15	4
Madison	36	33	2	2	2	6	12	15	12
McNairy	11	18	7	0	0	0	0	0	0
<b>NINTH DISTRICT</b>									
Tipton	6	14	8	0	0	0	6	5	0
Dyer-Lake-Crockett	31	38	7	3	0	1	10	24	30
Lauderdale	6	12	6	0	0	1	2	5	0
Haywood	15	20	5	1	1	0	12	0	15
Weakley	11	29	18	2	0	0	4	11	4
<b>TENTH DISTRICT</b>									
Shelby	305	400	50	18	11	4†	17	64	51

No report received from counties not listed above.

\*Hamilton—163 physicians, of whom 13 are colored.

†Williamson and Shelby—members transferred.

‡Hardin, Lawrence, Lewis, Perry, and Wayne.

§Organized November, 1933.

### Third District

Dr. Revington reported the district in good shape. He had visited a few of the societies during the year. Of the 14 members dropped by Hamilton County, several were coming back into the society. The society had cared for such doctors as were not able to pay dues.

### Fourth District

Dr. J. T. Moore, Algood, has heard from only a few of his counties. No trouble in the district. The councilor has met with several of the societies. In this district there is a very active five-county society. Dr. Moore reported, "Beginning the first of the year, we have had enthusiastic meetings, and Putnam County Medical Society is picking up. We have a lot of young doctors there that are coming into the county, and they are teaching us old fellows things that are worth something to us, and we have a good organization there."

### Fifth District

Dr. John Sutton, Petersburg, reported progress in the Fifth. A number of Marshall County doctors were joining Bedford County. Lincoln County has been reorganized.

### Sixth District

Dr. L. W. Edwards, Nashville, reported all counties in his district have active functioning societies except Cheatham County, but the doctors in that county were members of Montgomery County.

### Seventh District

Dr. B. T. Nolen, Franklin, reported the district at a standstill. He mentioned Dickson County with five members and thirteen eligible non-members, and Hickman County with four members and five non-members. Dr. Nolen thought these two counties could be combined into an active society.

### Eighth District

Dr. Jack Thompson, Jackson, reported all counties, except one, functioning. Haywood and Fayette Counties had surrendered their charters and were requesting the House of Delegates to issue a charter for the joint society. After full discussion of the question it was moved, seconded, put to a vote and carried that a new charter be issued to the Fayette-Hardeman County Medical Society. Upon recommendation of the Credentials Committee the delegate from the Fayette-Hardeman County Medical Society was seated in the House. Two other delegates, whose credentials were presented late, were also seated.

### Ninth District

Dr. E. H. Baird, Dyersburg, reported the Ninth District in good condition. Combining counties and postgraduate work as outlined by the Committee was being encouraged. Dr. Mitchell, of Memphis, had made a trip to Dyersburg, addressing the P.-T. A. in the afternoon and the Dyer, Lake, and Crockett County Society at night. Dr. Baird assured the House of his support of all programs and policies approved by the House.

### Tenth District

Statistical report read by Dr. S. R. Miller at the request of the Councilor, Dr. W. B. Burns.



Dr. H. H. Shoulders introduced Dr. W. H. Witt, who reported more fully for the Committee on Medical Education.

#### REPORT OF COMMITTEE ON MEDICAL EDUCATION

DR. W. H. WITT (Nashville): Mr. Speaker and Gentlemen: I am not the Chairman of this Committee. Dr. Warr of Memphis was the Chairman. We have corresponded with each other a number of times, and have had interviews with a number of physicians in Nashville who have been interested in this matter. We have formulated some general ideas which we think are probably good, which are not entirely in that report.

In the first place, we feel that we should restrict our interests to what we might legitimately call postgraduate instruction. We feel that the direction and control of that should be entirely in the hands of the State Medical Association. We feel also that even the financing of it should be done by the physicians themselves, if there is any financing, without the influence of any outside interests whatever. In that way we can better control the subjects that should be taught and the general course that should be carried out than if we depended upon other people to furnish us the money with which to do it.

For the present, at least, and probably for a number of years, we feel this instruction should be projected on a voluntary basis that carries practically no expense to the Association or anybody else except for the time involved by the men who devote themselves to this instruction process.

We feel that, better than having central courses and clinics, lasting for a week or two weeks, in which there is intensive and concentrated work done, drawing the men away from their duties at home, it would be advisable to formulate a plan by which the instruction would be carried to them. In the large districts there are medical societies that meet once a week practically throughout the year. They have all the larger cities taking interest in them. And from time to time they have visiting surgeons, internists, and specialists of every kind from the medical centers of the United States to visit with them, and they are able to carry on a better type of postgraduate instruction than can be looked for in the more rural districts.

We feel that the best way to manage this is not to depend upon the so-called county societies, but that pretty well over the state there should be organized groups of counties, consisting of two, three, four, or five counties. I am glad there is a move already to organize some of the societies, independent of this. And we feel that those groups of counties should try to work up an interest in postgraduate instruction, and that the teaching force should come partly from those localities themselves. I think they ought to be expected to furnish a certain number of papers. And in addition there should be men from the larger cities that for the present, at least, will be more than pleased to

volunteer their services for regular meetings at certain periods.

We feel that those meetings should probably come once a month over eight or nine months in the year, or probably the entire year, that the sessions should be for two or three hours, not less than one and a half and not more than three hours, and there should be made presentations of cases that the members would be interested in.

We feel that the general line of subjects that ought to be stressed could be largely worked out by some committee formed by the state society, making it as broad as it can be, and that would involve internal medicine, surgery, some of the specialties, and probably a certain amount of laboratory work.

Those are the main things that we have in mind, and we feel that we can get enough volunteer talent from the larger cities and from a number of the smaller ones, in addition to a certain amount of help from the local societies themselves, to conduct a course that will be very helpful.

The subjects to be selected can partly be selected by the individual groups themselves, with the request that certain subjects be discussed and that certain men come to discuss them. We feel in this way we can extend instruction that we all need, whether in the city or out in the country, and get them interested in matters that they are probably somewhat negligent about.

We have felt that for the first year or two it would be a good idea to devote a large part of this instruction and time to the measures of preventive medicine which are getting away from the physicians, particularly in the country, and also some of those in the cities, and if those men in the country can be made familiar with the demands of preventive medicine and the methods of using it, they will be in the best position to get the public at large interested in that kind of work.

Our report that Dr. Shoulders read recommended the appointment of a committee who shall put into effect as far as possible the groupings around the state, with central points to which the men could come, largely selected geographically, depending upon how good the roads are, that committee to be empowered to carry on the work that can be arranged for in the coming year, and make a report of what they do when we meet next year. All the men we have talked to feel that probably that is the best way at the present to approach the question of the dissemination of medicine and general medical knowledge throughout the whole state. It is a trial, and nobody knows how it will work out.

We have a number of counties that are doing excellent work. They call on men from the various cities for help, and they have good attendance. Individual county societies nearly always have small attendance, and there isn't the enthusiasm that could easily be worked up by getting more counties in a group. Transportation is such an easy thing nowadays that it is not difficult for

doctors to get together. The state could be grouped so there would be very few physicians more than an hour from a central point where he could spend two or three hours once a month and get what would be helpful to him if it were put before him correctly. (Applause.)

**SPEAKER ZEMP:** I think that is a splendid report, and I think the modesty of that committee prevented them from saying as much in their report as the work they have been doing might indicate. They have been doing good work, and that is a splendid idea. It has a dual effect. The men who attempt to teach others will become better physicians themselves, and they certainly will impart more knowledge to those they are teaching. It does not matter how good we think we are or how good we are, a review of the fundamental principles of medicine does us good. If you who have been in the practice a long time will pick up a modern textbook and read the articles in it on any subject you feel fully qualified to handle yourself, you will get a great deal of delight and profit. Your memory will be refreshed on small points you have forgotten, as well as learning new things.

I think the idea of educating these doctors everywhere, in cities as well as counties, on the fundamental principles of preventive medicine is a very important feature just now, because we are hearing a great deal about this subject of public health, and unless the doctors are qualified to carry out the things that we heard last night from Dr. Vaughn, we can blame nobody but ourselves if it is taken out of our hands and put into the hands of others less desirable.

I hope this committee will be continued. I think it is a bad idea to change some of these committees every year. They just become familiar with the work, and just at the time when they become most useful to the Association very often they are changed. I am going to suggest to the incoming President, whoever he may be, that he study this question very carefully and continue those committees that have started a good work, and let them carry it out, because they can do so more effectively than a new committee can.

Dr. Witt, we thank you for that report, and I think it was splendid.

#### ELECTION OF COUNCILORS

The Nominating Committee was called to report nominees for Councilors in the odd districts. In no case was any other name offered, and each nominee was elected by acclamation.

First District—Dr. L. E. Dyer, Greeneville.

Third District—Dr. J. H. Revington, Chattanooga.

Fifth District—Dr. John W. Sutton, Petersburg.

Seventh District—Dr. C. D. Walton, Mt. Pleasant.

Eighth District—After the death of Dr. A. B. Dancy, Dr. Jack Thompson, Jackson, was appointed Eighth District Councilor by President Everett to act until this meeting of the House of Delegates.

Dr. Thompson was elected Councilor for the coming year.

Ninth District—Dr. E. H. Baird, Dyersburg.

#### REPORT OF COMMITTEE ON THE REPORTS OF OFFICERS

Dr. L. W. Edwards read the report.

We, the committee on the report of officers, beg to report on the chairman of the Board of Trustees as follows:

First, the approval of the act to reorganize the Public Health Department as submitted by the report of the Board of Trustees.

Second, approve and recommend that the House of Delegates authorize the appointment by the Speaker of the House of Delegates of a committee of nine members of the Medical Association—three from each grand division of the state—for the purpose of contacting and committing all candidates for Governor and of the Legislature on the proposed act for the reorganization of the State Health Department.

Third, recommend that the Legislative Committee be authorized to spend whatever amount of money that may be found necessary in the way of paying traveling expenses of members who might be called to Nashville to aid in the passage of the bill, provided such expenses are approved by the Board of Trustees.

Fourth, approve and recommend the authorization of the Legislative Committee to make such compromises in bills appearing before the Legislative Committee as may seem fit and expedient from time to time, provided such changes do not alter the real objective and spirit of the bill in question, and that only the Legislative Committee be authorized to speak with authority on legislative matters between the sessions of the State Society.

Fifth, approve and recommend the adoption of the amendment to Chapter VII, Section 3, of the By-Laws of the Association as submitted by the Board of Trustees.

Sixth, recommend and approve of the plan of the Trustees for the handling of the Medical Defense Fund.

Seventh, approve the action of the Board of Trustees concerning the action taken by the Philadelphia Medical Society concerning the abuses of dispensary and social service department, and recommend that the House of Delegates instruct its delegates to the American Medical Association to support and vote for all movements the purpose of which is to classify institutions according to their ethical practices as ethical or unethical.

This report respectfully submitted:

L. W. EDWARDS

J. R. THOMPSON, JR.

R. H. NEWMAN.

Dr. Edwards moved that the House adopt the report in toto. The motion was regularly seconded, put to a vote, and carried.

DR. L. W. EDWARDS (Nashville): Your Committee also wishes to approve and recommend



the report of our Secretary-Editor of the Association. We wish to commend our Secretary-Editor for his excellent work in keeping the JOURNAL in such good condition when the question of finances probably has been an object that has been hard to overcome. We realize that the duties and activities of the office have multiplied enormously, and we feel that our Secretary-Editor has carried out the work in an excellent way, and we wish to commend him for this excellent work.

It was regularly moved, seconded, put to a vote, and carried that the additional report of the Committee on Reports of Officers be adopted.

#### REPORT OF COMMITTEE ON RESOLUTIONS

DR. M. S. ROBERTS (Knoxville): I have not been able to contact Dr. Bogart, one of the members of this Committee. Two resolutions have been presented. Those who were present yesterday heard them read.

The first was: "Resolved that the Legislative Committee be instructed to attempt to secure an amendment to the present law controlling the appointment of the State Board of Medical Examiners to provide and require that the Governor shall appoint a member of this Board from a list of five members of the State Medical Association to be nominated, from time to time, as vacancies occur, by this House of Delegates."

The Committee realizes there would probably be some opposition from the Board of Medical Examiners themselves in the future, to a certain extent a political organization, to being nominated by the Governor. However, the Committee recommends this resolution, with a suggestion that it not be pushed until after the more important legislation referring to the State Board of Health is dealt with.

The second resolution is as follows: "Resolved that the Legislative Committee be instructed to ask the next Legislature to enact a law requiring that every applicant for license to practice the art of healing shall be required to pass an examination on the basic sciences of medicine."

This proposed legislation would doubtless be opposed by all the cults who are now practicing the art of healing in the state, who are not required to take this examination on these basic sciences, and the Committee recommends this resolution with the same suggestion, that it not take precedence over more important legislation.

I move the adoption of the Committee's report.

The motion was regularly seconded, put to a vote and carried.

#### PRESIDENT'S ADDRESS

PRESIDENT EVERETT: Mr. Speaker, Gentlemen of the House of Delegates: It is indeed a pleasure to be able to meet with you at this time. We have been very busy over in the general sessions, and we have our program up to date. We started five minutes late this morning, but we are moving right along with our general program.

I do not know that I have any special message to bring before you at this time. Of course, I want to express my appreciation to the House of Delegates for their election of last year and for their cooperation this year, especially the men who have served on committees this year. I think I have had very good cooperation from every member of a committee that I have asked to do anything this year. They have been very loyal, and have, I hope, made prompt report at this meeting.

During the year, I have taken occasion to make a number of visits to component societies over the state. I believe this is something that should be done by the President of the Tennessee State Medical Association, because if there ever was a time when we needed cooperation from our members, it is now, and the only way we can get cooperation is to get a more thorough understanding of our problems between the members of the Society and the officers of the Association. It seems to me that a large part of our troubles might be solved with a more thorough understanding, because, after all, our problem concerns all of us and not any one individual. For that reason I think we should all work together and give the officers of the Association our most hearty support, for, whoever they may be, they are entitled to the support of each member, and when the officers call on you for certain services it is largely because they feel that you are the proper person to perform those duties. It may be that in your judgment some one else might fill the place better, but the officers think you can do it better, or they would not call on you. The cooperation of all of the members of the Association is essential in carrying out a program that will end for the good of all members.

There has been, as there will always be in an organization of this kind, some friction among our members, which should be eliminated. Some portions of the state seem to have a little more trouble than others in this respect. But as a whole I think our Association is comparatively free from any serious disruption among its members. Cooperation and loyalty to the Association will certainly win, if we will only continue to do those things.

Mr. Speaker, I do not believe I have anything special to bring before you at this time, except my best wishes for your continued success in the House of Delegates, and I am sure you are handling them in good order and will expedite the matters to the best interest of the Association. (Applause.)

#### HONORARY MEMBERS

After some discussion, it was made clear that each county society reported Honorary Members or Veteran Members to the Society and that members so reported would be carried as such by the Association.

The Speaker appointed the following committee to contact candidates for State Senator and members of the House of Representative in the coming

elections in regard to the bill for the reorganization of the Department of Health:

Dr. John M. Lee, Nashville, Chairman.  
Dr. Robert Sullivan, Nashville.  
Dr. H. S. Shoulders, Nashville.  
Dr. Battle Malone, Memphis.  
Dr. J. G. Price, Dyersburg.  
Dr. Walter Oursler, Humboldt.  
Dr. M. S. Roberts, Knoxville.  
Dr. E. G. Wood, Knoxville.  
Dr. W. J. Sheridan, Chattanooga.

#### HOSPITAL COMMITTEE

The Committee on the Reports of Committees approved the Hospital Committee's report and moved its adoption. Regularly seconded, put to a vote, and carried.

Meeting adjourned at 9:45 A.M.

#### HOUSE OF DELEGATES

Thursday, April 12, 1934

Speaker Zemp called the meeting to order at 8:40.

Dr. E. G. Wood (Knoxville) read the report of the Delegates to the American Medical Association.

#### REPORT OF THE MILWAUKEE SESSION OF THE AMERICAN MEDICAL ASSOCIATION OF 1933

*To the House of Delegates of the Tennessee State Medical Association.*

E. G. WOOD: The Eighty-fourth Annual Session of the American Medical Association, held at Milwaukee, June 12-16, 1933, was in many respects a truly notable meeting of physicians. The hosts of the occasion, the Medical Society of Milwaukee County and the State Medical Society of Wisconsin, were untiring in their efforts to provide every possible facility for contributing to the comfort, convenience and entertainment of their guests. The Local Committee on Arrangements, under the chairmanship of Dr. Stanley J. Seeger, having given months of effort before the meeting, was "on the job" down to the last minute, seeing to it that every schedule was carried out and doing all that could be done to make the occasion one of profit and pleasure for all in attendance. The Milwaukee Auditorium, a spacious and splendidly managed building, accommodated all of the Scientific Sections and all Exhibits. The Hotel Schroeder, where the meetings of the House of Delegates were held, provided unexcelled facilities, including a well appointed and conveniently located room for each reference Committee, and its management spared no effort in endeavors to contribute to the comfort and convenience of the Delegates. Many of the beautiful homes of Milwaukee were open to visiting physicians and members of their families. Local newspapers and national press organizations "reported" the transactions of the Sections and of the House of Delegates in splendid fashion. And clear skies and cooling lake breezes made great contribution

to bodily comfort and, therefore, to the general success of the meeting.

A fine program of clinical lectures was presented on the first two days. The attendance on these lectures was not nearly so large as it should have been. Those who could have gone to hear the lectures and failed to do so simply cheated themselves.

The papers read at the Section meetings were of a high order and were well received by rather large and attentive groups in nearly all of the Sections. Most of the papers read have appeared in the JOURNAL during the past year.

The Scientific Exhibit was made up of a truly remarkable group of individual, section and organization exhibits. The educational value of the various exhibits was greatly enhanced because of the presence of competent demonstrators who patiently and painstakingly explained and interpreted the displays and answered the questions and criticisms of hundreds of interested visitors each day.

The Technical Exhibition was unusually fine. The individual exhibits were tastefully displayed and were attended by efficient and courteous representatives of the manufacturers and distributors concerned.

More than 4,600 fellows registered at the Registration Bureau, but it is definitely known that a considerable number were present who did not register. Every state was represented except Nevada and every Territory except Alaska.

The Opening General Meeting on Tuesday evening, at which the President, Dr. Dean Lewis, was installed, was attended by an audience that overtaxed the seating capacity of the hall. In fact, many who came were unable to get in. The President's Reception of Thursday evening was a very delightful social occasion.

The Milwaukee Session was a successful and a truly notable meeting, attended by nearly 5,000 representative physicians from all parts of the land. One physician present, who rarely missed an Annual Session, after commenting in enthusiastic fashion on the high quality of the scientific programs, the delightful entertainment, the excellence of the exhibits and the thoroughness and efficiency of the House of Delegates, is reported as having said: "I am sorry for the member of the Association who could not go to Milwaukee, but, in some ways, I am much sorer for the man who could have gone and didn't."

One hundred and sixty-four Delegates were present. All constituent Associations were represented except those of Nevada, Alaska, Philippine Islands, and Puerto Rico. A representative of the Medical Society of the Philippine Islands was present, but, unfortunately was ineligible.

The registration of Delegates was completed more promptly and with less confusion than any previous session, thanks to the efficient work of the Reference Committee on Credentials, under its veteran Chairman, Dr. J. D. Brook, and to the Delegates themselves, who cooperated in splendid



fashion. More Delegates were in their seats at every meeting of the House than at any previous session.

The business of the House, under the direction of the Speaker, Dr. F. C. Warnshius, was transacted with dispatch. There was at all times an air of earnestness that pervaded the meetings so that one could but be impressed with the sincerity of purpose of the members of the House and with their very apparent desire to render worthy and efficient service.

The reference committees went about their work with vigor and with perfectly apparent determination to do their work well. There was no confusion over the time or the places of meetings, the members of the committees were in their places and stayed strictly on the job till it was done. Committee reports were ready when called for, except in one or two instances in which it was not possible to prepare the reports because of the large amount of business referred. There was more discussion of matters under consideration at committee meetings than ever before. That is why, perhaps, there was so little discussion on the floor of the House.

The Speaker in his introductory remarks of President Edward H. Cary made known the fact that Dr. Cary has responded in a most commendable manner. He has made a contribution possibly unequalled by any former President of the A. M. A. in that during his term of office he had traveled 99,190 miles on official business, been away from his home over 340 days in keeping 80 engagements in which he was the association's official representative.

Below follows a few high points of Dr. Cary's address to the House of Delegates and a few of the outstanding policies carried to a successful issue. First, the contention of our profession that the American physician should have the right to use his own judgment in prescribing alcoholic liquors. Second, the contention of the profession that a federal law which affects the practice of medicine is undesirable when it is directed by a bureau under lay control from the seat of the national government, for example, the Sheppard-Towner Act.

Third, we recognize that the narcotic question is international in aspect, and will require further international agreement before it can be controlled.

Fourth, the legislative committee had labored earnestly to meet the issue raised by the ever growing service to the veterans which is the result of legislation in their interest.

Fifth, the report of the committee on the costs of medical care had stimulated the interest of the public and of the profession.

He next discussed the relation of the private physician to the health department, and summarized as follows three important forces: First, the public health officer whose knowledge and sincerity are known to the medical profession and the public. The second force, which can be found in

every community, is the broadly educated, far-seeing medical practitioner. The third force is enlightened public opinion. Quoting Dr. Cary, "Those states which have so wisely returned their delegates year after year protect medicine from the vagaries of the hour. Seasoned legislatures are not created in a day; it has required patriotism and a very deep interest in things which concern the welfare of medicine to bring you annually to those meetings regardless of the meeting place and the distance you must travel for such occasion. To you and to your earnestness, I bend my knee. I only wish that the medical men of this country could understand you as I do. You would have in many places a finer sense of obligation developed toward you."

President-elect Dean Lewis spoke to the following points: the economic consequences of peace; the over hospitalization of non-service disabilities; and the responsibility of the government in the care of service-connected disabilities.

Next he considered the subject of medical and hospital insurance and issued a warning to beware of the promoters who are robed in the pure white of charity.

He stated in some ways the depression had rendered a great service, as it had demonstrated that many of the mechanical aids to practice are not necessary and that cost of medical service can be greatly reduced and the quality maintained. He urged simplification of medical practice, a limitation of specialism and the reduction of specialists.

Among the important actions of the House of Delegates were the following: On the recommendation of the Reference Committee on Medical Education, the following resolutions were adopted:

Resolved, that the Council on Medical Education and Hospitals is hereby authorized to express its approval of such special examining boards as conform to the standards of administration formulated by the Council; and be it further

Resolved, that the Board of Trustees of the American Medical Association be urged to use the machinery of its American Medical Association, including the publication of its Directory, in furthering the work of such examining boards as may be accredited by the Council.

The Reference Committee on Medical Economics recommended that the study of contract practice be continued and that county societies, in dealing with related problems, base action on the statement of the Judicial Council that had been previously held. The recommendation of the Committee was approved.

Concerning group hospital plans, the Reference Committee on Medical Economics reported as follows:

Group hospitalization has been described and criticized in several issues of the JOURNAL. Certain phases of some plans may have merit. The committee believes many contain features which are subversive to the best interest of the public,

the medical profession and the hospital, and it condemns any plan which incorporates principles contrary to the remarks on contract practice. The committee recommends that the results of the studies be published in the Medical Economics department of the JOURNAL.

This was adopted.

The Reference Committee on Medical Economics also offered the following recommendations which were adopted by the House of Delegates:

The provisions of most workmen's compensation laws have been a constant source of irritation and annoyance to employees, employers and the medical profession. The committee approves of the report prepared by the Bureau, on Medical Relations under Workmen's Compensation and recommends that it form the basis of state conferences.

The committee looks with favor on the medical economics course in medical colleges but urges that only competent instructors be employed. It recommends that the outline on medical economics be completed by the Bureau and submitted to all medical schools who desire it.

Group practice has received widespread attention. The articles in the JOURNAL have been comprehensive in scope and the facts presented well correlated and so authentic that they should form the basis for any consideration of the problem and be read by all members of the Association. Those forming a group should be guided by the same principles regarding professional qualifications for practice, ethical relations to fellow practitioners and consideration for the economic position of those whom they serve as should guide the individual practitioner.

The committee notes the conference on health and accident insurance practice and recommends the approval of the proposed short form health and accident claim proof blanks. It senses in this newly developed relation between our Association and this service group opportunities for improvement in our mutual contacts.

On recommendation of the Reference Committee of Hygiene and Public Health adopted the following resolution on radio advertising:

Whereas, radio broadcasting is under the control of the Federal Radio Commission, and

Whereas, there appears to be no apparent restrictions of the advertising statements and claims that are being broadcast, and

Whereas, it appears that the radio is being employed to broadcast unsupportable claims and statements related to a large number of alleged preparations for the cure of many ailments and diseases, thereby misleading the public; therefore be it

Resolved, that the Board of Trustees, through the Bureau of Investigation and through such other national organizations as the Board may be able to enlist, initiate and pursue activities and efforts to terminate misleading and misrepresenting radio broadcasting that is related to medicinal remedies and preparations.

Another recommendation of this committee proved by the House was to the effect that members of the association should "interest themselves in the valuation of the work of the Division of Vital Statistics as related to the medical profession, and that they render their assistance either as members of county, state or other organization, and as individuals."

The following resolution was adopted on recommendation of the Reference Committee on Legislation and Public Relations:

Resolved, that the House of Delegates of the American Medical Association endorse the Minority Report of the Committee on the Costs of Medical Care as expressive, in principle, of the collective opinion of the medical profession.

In adopting this resolution neither the reference committee nor the House of Delegates gave approval to any particular plan that has been anywhere proposed, but, rather, expressed approval of the Minority Report, "as expressive, in principle, of the collective opinion of the medical profession."

The following officers were then elected:

President-elect — Dr. Walter L. Bierring, Des Moines, Iowa.

Vice-President—Dr. John H. Musser, New Orleans, Louisiana.

Secretary—Dr. Olin West, Chicago, Illinois.

Treasurer — Dr. Herman Kretschmer, Chicago, Illinois.

Speaker of House of Delegates — Dr. F. C. Warshuis, Grand Rapids, Michigan.

Vice Speaker of House of Delegates—Dr. Natham B. Van Etten, New York, New York.

Trustees—Dr. Austin A. Hayden, Chicago, Illinois, and Dr. C. B. Wright, Minneapolis, Minnesota.

Next annual meeting place—Cleveland, Ohio.

#### COUNCIL'S REPORT

DR. S. R. MILLER (Knoxville): The Councilors' meeting yesterday took some action. I will read you their minutes: "The policies of the council were discussed at length and especially concerning the membership of all eligible practitioners in the non-functioning counties. Several counties were paying their dues but not having meetings or otherwise functioning. It was moved and seconded and carried that the House of Delegates be and is hereby requested to authorize the Councilors to give authority to request the surrender of their charter of such counties that had not functioned for the last two years, and that the local Councilor arrange for all eligible members of the profession in such counties to join another County Society of their choice when such counties cannot be formed into joint County Societies as recommended by the Board of Trustees.

"It was further ordered that the Councilors urge and cooperate with such eligible physicians to secure such membership at an early date. It was suggested that the larger counties that have



large dues" (this is merely a suggestion) "arrange a non-resident dues of smaller amount for those in other counties who cannot attend regularly and participate in the full activities and social features of such societies."

Moved by Dr. K. S. Howlett, seconded by Dr. E. G. Wood, that the House approve of the Council's report. Motion put to a vote and declared carried.

#### RESOLUTION RE DR. W. K. SHEDDAN, COLUMBIA

Dr. K. S. Howlett proposed the following resolution:

"Resolved, that we send greetings to Dr. Sheddan and express our profound regret that he could not honor us with his presence at this meeting."

The adoption of the resolution was moved, seconded, put to a vote, and carried.

#### ELECTION OF OFFICERS

The Nominating Committee submitted the following report:

##### President

J. O. Manier, Nashville.  
R. B. Gaston, Lebanon.  
Chas. F. Anderson, Nashville.

##### Vice-President

Middle Tennessee—J. K. Blackburn, Pulaski.  
East Tennessee—W. B. Campbell, Cleveland.  
West Tennessee—G. H. Berryhill, Jackson.

##### Speaker of House

E. R. Zemp, Knoxville.

##### Secretary-Editor

H. H. Shoulders, Nashville.

##### Trustee

Middle Tennessee—C. M. Hamilton, Nashville.

##### A. M. A. Delegate

West Tennessee—H. B. Everett, Memphis.

##### A. M. A. Alternate

West Tennessee—E. C. Ellett, Memphis.

##### Medical Defense Committee

S. R. Miller, Knoxville.

#### BOARD OF HEALTH COMMITTEE

##### Middle Tennessee

T. R. Ray, Shelbyville.  
E. M. Fuqua, Pulaski.  
J. S. Freeman, Springfield.  
John M. Lee, Nashville.  
C. M. Hamilton, Nashville.  
W. G. Kennon, Nashville.

##### East Tennessee

R. B. Wood, Knoxville.  
Dan Thomas, Calderwood.

W. D. Anderson, Chattanooga.  
D. Isbell, Chattanooga.  
C. P. Fox, Sr., Greeneville.  
W. K. Vance, Jr., Bristol.

##### West Tennessee

J. C. Ayres, Memphis.  
Tom Mitchell, Memphis.  
J. W. McClaran, Jackson.  
J. R. Thompson, Jr., Jackson.  
J. B. Blue, Memphis.  
N. S. Walker, Dyersburg.

After each of the above nominations were made the Speaker called for nominations from the floor. No additional nominations were made.

For President a ballot resulted in the election of Dr. J. O. Manier, Nashville.

All other nominees listed above were elected by acclamation.

Drs. Revington and Williamson were appointed to escort the newly elected president to the House of Delegates.

#### PROPOSED AMENDMENT TO THE CONSTITUTION

At the request of Dr. K. S. Howlett, Dr. H. H. Shoulders filed the following resolution: "That the Constitution be amended by adding to Article VIII, Section 2, 'Only duly elected delegates from the component County Medical Societies shall vote on the election of officers.'"

Of course, under the provisions of the Constitution this amendment must be read this year and be considered and acted upon next year.

Secretary Shoulders read telegrams from Jackson and Memphis, each city inviting the 1935 meeting of the Association.

The newly elected President was introduced and spoke as follows:

**PRESIDENT-ELECT MANIER:** Gentlemen, it is scarcely necessary for me to express the appreciation that I feel. I think you know that without being told. I do not believe any one ever approached this position with a feeling of greater humility.

We have had a wonderful meeting down here this year, and we have set in motion something that, if we carry it through, is going to finally attain for us what we have wanted for years, and yet I do think this word of warning should be stated with regard to that:

It is all very well to come here for three days and become enthusiastic over a program, but unless we can carry back that enthusiasm to our own communities and follow out that program which this body adopted, we can scarcely hope to get very far. I think it can hardly be stressed too much how essential it is for the members of this House of Delegates, who by virtue of being members of this body are naturally represented in their respective counties as being leaders of the profession in those counties, to go back and assume the leadership in helping the committees that have

been appointed to foster the major objective we have, the bill for the Health Department.

It will be necessary many times during the year to call on each and all of you to help in this way, and I sincerely bespeak your cooperation and help in any way that it may be asked. Thank you. (Applause.)

#### TUBERCULOSIS PATIENTS

Secretary Shoulders read a letter from Mr. J. P. Kranz, Executive Secretary of the Tennessee Tuberculosis Association, regarding care of indigent tuberculosis patients.

Moved, seconded, and carried that the Secretary write Mr. Kranz "that the House of Delegates confirms the general knowledge among the medical profession that we are perfectly willing to take care of our share of indigent people and approve their action that they should be taken care of on some satisfactory fee schedule."

#### 1935 MEETING PLACE

The invitation to meet in Memphis was accepted by a vote of the House. Then the possibility of the Legislature's being in session during our next annual meeting was considered. The vote to meet in Memphis was rescinded and a motion was made by Dr. W. B. Burns, seconded by Dr. J. W. McClaran, put to a vote, and carried, fixing Nashville as the meeting place for the 1935 annual meeting.

#### REPORT OF THE COMMITTEE TO CONTACT CANDIDATES FOR GOVERNOR AND THE LEGISLATURE WITH REGARD TO THE HEALTH DEPARTMENT REORGANIZATION BILL

DR. SULLIVAN (Nashville): This is the preliminary report of your committee, of which Dr. Lee of Nashville is Chairman. Dr. Lee had to leave.

Dr. Sullivan read the report of the committee.

April 12, 1934.

We, your committee, appointed and instructed to contact candidates for the office of Governor and Legislature and pledge their support of the bill to reorganize the Health Department, beg leave to report to you as follows:

1. On yesterday we were approached by Dr. E. W. Cocke, acting for, and with authority from, Governor McAlister, who asked us whether or not the following action would meet the approval of this Association:

(a) The removal of the Council of Health as now constituted, and the appointment of a new Council, the membership of which is provided for in the bill indorsed by this House yesterday.

(b) That the Commissioner of Health will be instructed by the Governor to comply with the regulations of the Council thus created in the administration of his department as provided for in Section 3, as follows:

"Section 3: That the Council shall be given absolute power to formulate the policies of the Department of Public Health and supervise its activities."

(c) That the Governor and Commissioner of Health will pledge their indorsement of the bill in writing, and also pledge in writing the support of the personnel of the Health Department in the passing of the bill by the next Legislature.

2. We recommend that this House of Delegates approve these proposals.

After considerable discussion, the House voted to take no action on the report, but to leave the whole matter with the Committee.

The meeting adjourned at 9:45.

H. H. SHOULDERS, Secretary-Editor.

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## THE NEWER CONCEPTS OF CARDIOVASCULAR SYPHILIS\*

FREDRICK A. WILLIUS, M.D., Section on Cardiology, The Mayo Clinic, Rochester, Minnesota

**S**YMPTOMS and signs of cardiovascular involvement, ordinarily, are one of the later manifestations of syphilis. An average of twenty years elapses from the time of the initial lesion of the disease until conclusive evidence of cardiovascular impairment is presented, and it thus becomes imperative that attention be placed on the early rather than on the late manifestations of the disease if the disabling effects of these complications are to be avoided. At times, the intervening years are considerably less than average, which is particularly true in cases of hereditary syphilis. Cardiovascular syphilis occurs at all ages, but it is observed predominantly in the fifth and sixth decades of life and predominantly among males, the ratio of males to females being about five to one.

In considering the question of cardiovascular syphilis one is dealing essentially with disease of the aorta. Klotz and others have given interesting evidence as to the mode of infection. It is believed that the organism gains entrance into the aorta by way of the minute lymphatic structures which accompany the vasa vasorum, and that the adventitia of the artery becomes involved first, resulting in periaortitis. The media then becomes extensively involved, resulting in mesaortitis and, finally, the intima becomes the seat of disease. The intimal changes are quite characteristic, becoming evident as irregular patches of grayish or pinkish discoloration, at times slightly indented and associated with linear scars. These lesions may sometimes be obscured by true atheromatous patches, particularly among patients in the older age groups.

The inflammatory process of syphilis results in a reparative fibrosis; in the early stages revealing the infiltration of many round cells and soon succeeded by a fibroblastic reaction, a process that tends to heal by considerable scarring and deformity. The aorta is involved in the following manner: The origin or root of the aorta is by far the most common seat of involvement, and, then, in order of frequency, the ascend-

ing aorta, the arch, the descending aorta, and, lastly, the abdominal aorta and its tributaries. Not so long ago great stress was placed on so-called syphilitic myocarditis, but studies of the last ten or fifteen years have indicated that actual involvement of the cardiac muscle by syphilis is a relatively unusual finding. The heart becomes hypertrophied and may often fail and result in death, but these conditions are the result of primary changes in the aorta.

When one recalls the fact that syphilitic aortitis occurs predominantly and outstandingly in the first portion of the aorta, it will also be recalled that that segment of this important artery has two vital components, which, when they become diseased, lead to serious and permanent mechanical barriers to efficient cardiovascular activity. The first component consists of the aortic valves, and it is, of course, a well-known fact that aortic insufficiency is very commonly of syphilitic origin. Syphilis is the etiologic factor in aortic insufficiency among approximately 30 to 40 per cent of the adult white population. This is brought about by invasion of the commissures of the valves, whereby these structures become widened, and the valves insufficient; further deformity may result from cicatrization. A weakening of the ring, resulting from involvement of the leaflets, particularly at their point of origin, tends to occur, so that marked degrees of aortic insufficiency often are present. This lesion has a marked effect on the heart, causing an enormous increase in the load for the left ventricle, so that this chamber soon becomes the seat of a progressively increasing hypertrophy and, consequently, dilatation occurs with cardiac failure. Interestingly, hypertrophy of the heart is not limited to the left ventricle; all chambers participate to some extent, although not in the same proportion.

The second important component of the first portion of the aorta comprises the coronary orifices, the points of origin of both the right and the left coronary arteries. Frequently the syphilitic process has so involved this portion of the aorta that these small openings become definitely narrowed and

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impaired by the fibrotic process, so that at times the lumens are so reduced that a small bristle can be introduced only with great difficulty. This lesion, of course, gives rise to a disturbance in function identical to that which occurs in sclerosis of the coronary arteries, namely, the anginal syndrome and paroxysmal dyspnea. The heart muscle responds to this lesion in the same manner as it does to gradual obliteration of the coronary arteries, namely, by the occurrence of myofibrosis, which is the lesion resulting from chronic deprivation of circulation. These findings probably led previous observers to interpret them as evidences of myocarditis, and this concept probably was strengthened by the occasional demonstration of spirochetes in the heart muscle. This, however, is not irrevocable evidence, as these lesions are identical to those seen in cases of coronary disease in which it is generally accepted that the element of infection does not play a material part, and the occasional finding of an organism or of a bacterium in a tissue is not positive proof that it has exerted a destructive influence.

It is very rare to see the coronary arteries themselves involved in the syphilitic process, the lesions usually terminate abruptly at the point of origin of the coronary arteries.

An important lesion resulting from aortic syphilis is aneurysm. The aneurysm may be fusiform or saccular, and it may be situated in the ascending portion of the aorta, in the arch, in the descending thoracic portion or, lastly, in the abdominal aorta. Unless aortic insufficiency or atresia of the coronary orifices is present, the presence of aneurysm causes but little effect on the heart. The development of aortic insufficiency, before dilatation of the aorta occurs, often prevents the formation of aneurysm by relieving intra-aortic pressure.

The occurrence of gummas in the heart muscle is rare; they are found in only 2 per cent of cases at necropsy. They may be found in the auricular and ventricular walls and, occasionally, in the septa. When the interventricular septum is involved, particularly in its upper portion, the auriculo-ventricular bundle and its branches also may become involved, resulting in various types of heart block.

The symptoms of cardiovascular syphilis are not characteristic and are the same as those which occur with various types of cardiopathy. There may be a total absence of symptoms until such sequelae as aortic insufficiency, atresia of the coronary orifices, or aneurysm appear. Aortic insufficiency ultimately results in dyspnea, occurring on undue effort, and, later, may present the well-known syndrome of congestive heart failure.

The symptoms attending thoracic aneurysm are variable and depend largely on the encroachment of the pulsatile mass on surrounding structures. Pain in the mid-portion of the thorax may occur with or without relation to effort, frequently being projected through to the back, and usually being of longer duration than that which occurs in the anginal syndrome.

Obstruction to the flow of blood through large intrathoracic vessels may occur, and dysphagia, resulting from pressure on the esophagus, obstructive dyspnea, from tracheal compression, and hoarseness and brassy cough, from pressure on the recurrent laryngeal nerve, may also occur. The heart does not become involved in aneurysm unless aortic insufficiency, atresia of the coronary orifices, or obstruction to great vessels occurs.

The signs of syphilitic aortitis may vary greatly. The process in the aorta may be quite advanced without presenting physical or other signs to indicate its presence. However, its presence may be demonstrated before involvement is extensive. When the mode of invasion of the aorta is recalled, in cases in which early involvement occurs as periaortitis, it becomes possible to visualize the mechanism underlying certain early physical signs. In the development of periaortitis, the wall of the vessel tends to lose some of its elasticity and to become more rigid, so that, when the aortic cusps are still competent, they close more forcibly, owing to the tendency of the intra-aortic pressure to be increased. This gives rise to the tympanitic accentuation of the second heart tone that is heard over quite a localized zone at the second, right intercostal space. Potain years ago described this phenomenon as the "bruit de tabourka," a peculiar tympanitic sound like that caused by beating on a small drum. Later, as



medial and intimal changes occur, a rough, reverberant systolic murmur, without a thrill, is audible in quite a limited zone over the aortic region, and it may be transmitted into the carotid arteries. This murmur must be distinguished from that occurring in aortic sclerosis, which becomes a problem chiefly among patients in the older age groups.

When aortic insufficiency supervenes, the physical findings of this lesion are readily identified; namely, the presence of a loud, blowing diastolic murmur, heard best in the aortic area or to the left of the lower portion of the sternum, the water hammer and capillary pulse, and the femoral bruits when these arteries are compressed (Durozier's sign). Cardiac enlargement soon occurs and is particularly manifest in the left ventricle; an increase in pulse pressure also occurs by virtue of elevation of the systolic pressure, but particularly by virtue of marked reduction in diastolic pressure.

Narrowing of the coronary orifices occurs frequently without the presence of distinctive physical signs. The occurrence of the anginal syndrome in a case of proved or suspected syphilis should at once direct suspicion toward this possibility. The heart does not become enlarged unless the lesion is complicated by aortic insufficiency or by some independent and unassociated cardiac lesion in itself capable of producing hypertrophy. The roentgenogram usually does not reveal positive findings; the electrocardiogram, however, frequently reveals those abnormalities encountered in obliterative disease of the coronary arteries, namely, T-wave negativity and bundle-branch block.

The signs of aneurysm of the thoracic aorta vary widely. Instances are met with in which positive evidence of its presence is only revealed by the roentgenogram. At times, particularly in advanced cases, the wall of the thorax bulges, and the pulsatile tumor may be clearly visible. In cases of aneurysm of the ascending aorta or of the arch, a definite widening of the percussion dulness may occur at the basal region of the heart. The palpating hand placed over this region usually permits the demonstration of a diastolic heaving of the wall of the thorax. A tug of the trachea may usually be elicited, which is synchronous with the aneurysmal pulsation. At times,

regions of dulness may be demonstrated over the posterior surface of the thorax, particularly in cases in which the aneurysm involves the descending thoracic aorta. The greatest diagnostic difficulties are encountered when the aneurysm involves the descending aorta, and the roentgenogram may be the only means of positive identification.

Roentgenography is a valuable and important adjunct in the diagnosis of cardiovascular syphilis, but its chief value is in moderately advanced and advanced cases. Careful physical examination and judicious interpretation of findings are of outstanding importance in all cases and usually reveal the only conclusive findings in early cases. The heart and aorta should be examined by the teleoroentgenogram and with the fluoroscope.

Serologic reactions on the blood and spinal fluid are important diagnostic procedures. It is an acknowledged fact that the history of previous syphilitic infection is very unreliable, as many patients flatly deny having been infected until they are confronted by positive evidence. Since the advent of the more sensitive serologic reactions, such as the flocculation tests of Hinton and Kline, the percentage of positive primary reactions has risen to about 90 per cent. A negative reaction, in the face of a history or physical findings of infection, must never be the basis for the repudiation of the diagnosis of syphilis.

Among young and middle-aged individuals with evident cardiovascular syphilis, involvement of the central nervous system must always be suspected, owing to the frequency with which these conditions coexist. Unless the cardiopathy has advanced to a hopeless stage, these patients should be subjected to careful neurologic investigation and the spinal fluid carefully studied. The latter procedure must not only include serologic study, but a careful calculation of the cell count, which should be done at once, as the procedure is of little value when the specimen has been permitted to stand any length of time. The colloidal gold reaction is helpful in distinguishing lesions of paresis and those of meningeal and parenchymatous involvement. These procedures reveal positive findings in about 60 per cent of cases of cardiovascular syphilis.

In cases in which physical or laboratory findings with respect to cardiovascular

syphilis are doubtful, the demonstration of syphilitic disease elsewhere in the body often permits the diagnosis to be positively made. This fact emphasizes the importance and the necessity of complete and thorough physical examination in all cases.

In general, the prognosis regarding cardiovascular syphilis is poor. This is due to the fact that cardiac symptoms and signs are insidious in their onset, with the result that the lesion frequently is moderately advanced or advanced before its true nature is recognized. The high incidence of cardiovascular syphilis is a sad commentary on the inadequacy of the treatment of early syphilis. Only too often the physician pronounces his patient cured when the chancre and the ensuing secondary phenomena of the disease have disappeared, and twenty years later the patient's decline and premature death from cardiovascular impairment glaringly reveals the physician's error in judgment.

When the cardiovascular lesion has become a mechanical barrier impairing circulation, it is beyond the stage of curability, although often the judicious and cautious employment of antisiphilitic treatment will ameliorate symptoms and aid in the prolongation of life.

The treatment of cardiovascular syphilis is primarily and preeminently treatment of the heart, in the same manner that cardiac disease from any cause would be managed. A regimen directed toward the removal of stresses and strains to lighten the burden on the heart should be selectively individualized in each case. It may mean moderate physical restrictions on the one hand and complete rest in bed on the other. When cardiac failure is present, the usual procedures employed in the treatment of this condition should first be instituted, and, under ordinary conditions, antisiphilitic treatment should be deferred until the reestablishment of function has been achieved.

The age of the patient to a considerable degree determines the selection of the therapeutic program. For individuals in the older age periods, that is, sixty years or older, treatment should be conservative. Such patients have attained the age when cure is out of the question, and the very fact that they have reached this age indicates that the syphilitic process is probably no longer unduly active; the high incidence of associated arteriosclerotic changes of the aorta

and of the coronary arteries in itself indicates caution. Under these conditions the administration of iodides orally usually will suffice; they should be given in courses beginning with 10 minims, three times daily (potassium iodide, 1 minim of the solution equals 1 grain), and gradually increased until 50 minims, three times daily, are administered. This drug may be alternated with inunctions of mercury, or mercury with chalk, U.S.P., in the form of tablets weighing 1 grain (0.065 gm.) each may be administered by mouth, in doses of one tablet three times daily.

Younger patients, with or without recent cardiac failure, should only receive anti-syphilitic treatment while under complete rest in bed. They are first given iodides by mouth, in the manner just described, for two or three weeks; then, intramuscular injection of potassium bismuth tartrate is instituted, beginning with 0.1 gm. and increasing to 0.2 gm. at intervals of two or three times weekly.

After two to three weeks of this treatment, cautious intravenous injections of arsphenamine are begun. The initial dose usually is 0.3 gm. or less, and this is then gradually increased to 0.4 or 0.5 gm. weekly for eight weeks. The procedure is then repeated in three to four months and again at the end of a year, with intervals in which inunctions of mercury are given and iodides are administered by mouth. It may be necessary to administer this treatment from time to time for a period varying from two to five years.

In event that arsphenamine is not well tolerated, which at times is the case, potassium bismuth tartrate or bismarsen may be substituted.

Before closing I wish to make a plea for the early recognition of syphilis and for its adequate treatment in the early stages so that the visceral catastrophes of a later day may be averted. One is no more justified in pronouncing a patient with syphilis cured at the end of a year than one is in giving this verdict to a patient a year after radical amputation of the breast for carcinoma.

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# THE JOURNAL

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H. H. SHOULDERS, M.D., Editor and Secretary

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## EDITORIAL

### THE SPIRIT OF CHRISTMAS

It is our belief that the spirit of Christmas, the spirit of peace and good will, is more evident in the ranks of the medical profession of Tennessee than was ever the case before.

There is room for improvement, and in our opinion such improvement is on the way.

We have often said and will repeat again that "a well-organized and well-equipped profession of medicine is the greatest protection of the public health as well as the individual health of the people of the state."

Every contribution toward a well-organized and well-equipped medical profession in Tennessee—one which is harmonious and awake to its responsibilities—is a contribution to the well-being of the people of the state.

### A CHRISTMAS GREETING!

The staff of the headquarters office—Dr. H. H. Shoulders, Secretary-Editor; Dr. W. M. Hardy, Assistant Secretary-Editor; and Miss Willard Batey, Office Secretary—wish to extend Christmas greetings to the entire membership of the Tennessee State Medical Association.

### THE WORK OF THE LEGISLATIVE COMMITTEE

This year at Chattanooga the House of Delegates took action to the effect that no member of the association can assume to speak for the association on legislative matters excepting the Legislative Committee.

At previous sessions of the legislature, a few members scattered over the state have taken action opposed to the legislative policies adopted by the association, with the result that confusion was created. The impression was created that the profession is widely divided. Such a condition has led to the oft-repeated expression by legislators about as follows: "You doctors never can get together." It puts the Legislative Committee in a very embarrassing and often helpless position.

It is perfectly obvious to any sane person that for an organization to function effectively it must function as a unit. The unit is composed of many parts. Each of the parts may have separate functions, but as a whole they must function together.

At this moment the profession is functioning more as a unit than was ever the case before. This must be the case when the legislature convenes in January, 1935.

The association is sponsoring legislation of vital importance to the public and the profession. The opponents of such legislation always seek to create a division of opinion among doctors. It evidently was the intent of the House of Delegates that such unfortunate developments should not take place again.

The work of the Legislative Committee is always difficult and usually thankless. The membership should either support its Legislative Committee or fire it.

New legislation is brought up at every session of the legislature, in which the profession is vitally interested. Such a development is anticipated next year. The committee is compelled to study such legislation and to act upon it promptly. They are not likely to go far wrong. They have not done so heretofore. They cannot possibly contact every society for an expression of opinion. It is also of vital importance that local societies not indorse measures which have not been considered first by the Legislative Committee. Those who approach local societies for indorsements of legislation should be referred first to the Legislative Committee. We must all hang together.

**DR. E. W. COCKE**

Dr. E. W. Cocke has held the office of Commissioner of Institutions for Tennessee for a period of about two years. He was called to a difficult task at a time and in a period when circumstance made the duties more difficult. He has performed his duties in such a way as to merit commendation.

He has brought forward the medical viewpoint in administering care to the wards of the state. He has upheld the high ideals and traditions of our noble profession.

He doubtless has not followed the dictates of his own best judgment in every act of his administration. A man in public office is often compelled by circumstance to make compromises with his own best judgment, but no compromise that he has made, in so far as we know, has involved any compromise of honor and integrity as a doctor and as a man.

The profession of Tennessee, in our opinion, may take pride in the qualities he has displayed and the achievements he has wrought as an administrator of public duties.

It is believed that the sentiments and judgments herein expressed are held by a vast majority of doctors in Tennessee.

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**DR. H. L. FANCHER**

The death of Dr. H. L. Fancher removed from the ranks of organized medicine one of its outstanding characters.

Dr. Fancher achieved the distinction of having worked in the ranks and in positions of leadership in organized medicine. In both positions he served with fidelity.

One of his outstanding traits that should receive emphasis was tolerance. He always displayed an attitude of tolerance toward the weaknesses and mistakes of men. He displayed tolerance at a time when intolerance was the order of the day.

He learned how to play. This undoubtedly helped to keep him human in his attitude toward his fellows.

He will be sorely missed from the ranks of organized medicine in Tennessee.

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**PRINCIPLES OF THE CODE OF MEDICAL ETHICS**

Ethical questions are arising with increasing frequency. The Principles of the Code of Ethics have not received the wide circulation to which they are entitled from the important bearing they have on the practice of medicine. For these reasons, together with many others, the Principles of the Code of Ethics, as revised to date, are reproduced on another page of this issue.

**D E A T H S**

Dr. H. L. Fancher, Chattanooga; University of the South, Medical Department, Sewanee, 1899; aged 61; died November 12, after a short illness.

Dr. Henry S. Morris, Nashville; Vanderbilt University Medical School, Nashville, 1890; aged 67; died November 17.

**R E S O L U T I O N S**

For him the best was hardly good enough,  
With good unbettered he could never rest;  
His eye could see perfection in the rough,  
His aim—a little better than the best!

To pay homage to the memory of a great surgical benefactor and to focus attention on what he has bequeathed to posterity is not only our great honor, but it is our solemn duty to present these resolutions on the passing of our friend and colleague, Dr. Hampton L. Fancher, which occurred November 12, 1934. Therefore,

Be it resolved, That the Chattanooga Surgeons' Club deeply mourns the loss of Dr. Fancher, and

Be it further resolved, That this club extend to his family its heartfelt sympathy and condolence, and

Be it further resolved, That this instru-



ment be sent to his family, and a copy be spread upon our minutes.

G. VICTOR WILLIAMS, *Chm.*

J. H. REVINGTON

B. L. JACOBS

Approved December 6, 1934:

EDWARD T. NEWELL, *President*

G. VICTOR WILLIAMS, *Secretary*

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On November 12, 1934, the Chattanooga and Hamilton County Medical Society lost one of its most valued members and past president in the death of Dr. Hampton L. Fancher. He was born at Fancher Mills, now Sparta, Tennessee, sixty-one years ago. He was educated at University of the South at Sewanee. Married to Miss Ruth Harvey in 1903. First practiced at Orme, Tennessee, and came to Chattanooga in 1909. He was past president of the Tennessee State Medical Association and at the time of his death was president of the Surgeons' Club. For several years he was Chief of Staff of Erlanger Hospital and member of the staff for twenty-five years. One of his sons, Dr. James Richard Fancher, is serving his internship at Erlanger at this time.

Dr. Fancher held a unique position in the history of the Chattanooga and Hamilton County Medical Society. He was one of the most highly educated surgeons in the South, being well qualified for constructive criticism in all branches of surgery and medicine. Being a great lover of nature, he was naturally attracted to the breeding of fine bird dogs and hunting, as a hobby.

Dr. Fancher was not only a great surgeon, but was a leader in organized medicine, and held the highest esteem of his fellow members.

Be it therefore resolved: That the Chattanooga and Hamilton County Medical Society deeply deplore the passing of Dr. Fancher, and be it further resolved, that we extend to his bereaved family our sincere sympathy and condolence, and be it further resolved, that a copy of this preamble and these resolutions be sent to the family of the deceased, a copy spread upon

our Record Book, and a copy sent the Secretary of the State Medical Society.

D. N. WILLIAMS, *Chairman*

J. B. MCGHEE

A. F. EBERT

L. T. BROOKS

J. W. BRADLEY

*Memorial Committee.*

Approved November 22, 1934:

FRANKLIN B. BOGART, *President*

W. J. SHERIDAN, *Secretary*

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On Monday, October 22, 1934, the Chattanooga and Hamilton County Medical Society lost one of its valued members in the death of Dr. W. E. Vaden. He was born and reared near Franklin, Tennessee; taught school as a young man for several years; then entered Vanderbilt Medical School, graduating in 1898. He located at Rich Creek, Marshall County, practicing there until the World War; then he moved to Old Hickory, near Nashville, remaining there about three years. He next located in St. Elmo, Tennessee, and remained there until his death.

Dr. Vaden had a splendid reputation, both as a man and a physician.

Be it therefore resolved: That the Chattanooga and Hamilton County Medical Society deeply deplore the passing of Dr. Vaden, and be it further resolved, that we extend to his bereaved family our sincere sympathy and condolence, and be it further resolved, that a copy of this preamble and these resolutions be sent to the family of the deceased, a copy spread upon our Record Book, and a copy sent the Secretary of the State Medical Society.

D. N. WILLIAMS, *Chairman*

A. F. EBERT

L. T. BROOKS

J. W. BRADLEY

J. B. MCGHEE

*Memorial Committee.*

Approved November 1, 1934:

FRANKLIN B. BOGART, *President*

W. J. SHERIDAN, *Secretary*

## PRINCIPLES OF MEDICAL ETHICS

### CHAPTER I.—IN GENERAL

#### The Physician's Responsibility

Section 1. A profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration. The practice of medicine is a profession. In choosing this profession an individual assumes an obligation to conduct himself in accord with its ideals.

#### Groups and Clinics

Sec. 2. The ethical principles actuating and governing a group or clinic are exactly the same as those applicable to the individual. As a group or clinic is composed of individual doctors, each of whom, whether employer, employee or partner, is subject to the principles of ethics herein elaborated, the uniting into a business or professional organization does not relieve them either individually or as a group from the obligation they assume when entering the profession.

### CHAPTER II.—THE DUTIES OF PHYSICIANS TO THEIR PATIENTS

#### Patience, Delicacy and Secrecy

Section 1. Patience and delicacy should characterize all the acts of a physician. The confidences concerning individual or domestic life entrusted by a patient to a physician and the defects of disposition or flaws of character observed in patients during medical attendance should be held as a trust and should never be revealed except when imperatively required by the laws of the state. There are occasions, however, when a physician must determine whether or not his duty to society requires him to take definite action to protect a healthy individual from becoming infected, because the physician has knowledge, obtained through the confidences entrusted to him as a physician, of a communicable disease to which the healthy individual is about to be exposed. In such a case, the physician should act as he would desire another to act toward one of his own family under like circumstances. Before he determines his course, the physician should know the civil law of his commonwealth concerning privileged communications.

#### Prognosis

Sec. 2. A physician should give timely notice of dangerous manifestations of the disease to the friends of the patient. He should neither exaggerate nor minimize the gravity of the patient's condition. He should assure himself that the patient or his friends have such knowledge of the patient's condition as will serve the best interests of the patient and the family.

#### Patients Must Not Be Neglected

Sec. 3. A physician is free to choose whom he will serve. He should, however, always respond to any request for his assistance in an emergency or whenever temperate public opinion expects the service. Once having undertaken a case, a physician should not abandon or neglect the patient because the disease is deemed incurable; nor should he withdraw from the case for any reason until a sufficient notice of a desire to be released has been given the patient or his friends to make it possible for them to secure another medical attendant.

### CHAPTER III.—THE DUTIES OF PHYSICIANS TO EACH OTHER AND TO THE PROFESSION AT LARGE

#### Article I.—Duties to the Profession Uphold Honor of Profession

Section 1. The obligation assumed on entering the profession requires the physician to comport himself as a gentleman and demands that he use every honorable means to uphold the dignity and honor of his vocation, to exalt its standards and to extend its sphere of usefulness. A physician should not base his practice on an exclusive dogma or sectarian system, for "sects are implacable despots; to accept their thralldom is to take away all liberty from one's action and thought." (Nicon, father of Galen.)

#### Medical Societies

Sec. 2. In order that the dignity and honor of the medical profession may be upheld, its standards exalted, its sphere of usefulness extended, and the advancement of medical science promoted, a physician should associate himself with medical societies and contribute his time, energy and means in order that these societies may represent the ideals of the profession.

#### Deportment

Sec. 3. A physician should be "an upright man, instructed in the art of healing." Consequently, he must keep himself pure in character and conform to a high standard of morals, and must be diligent and conscientious in his studies. "He should also be modest, sober, patient, prompt to do his whole duty without anxiety; pious without going so far as superstition, conducting himself with propriety in his profession and in all the actions of his life." (Hippocrates.)

#### Advertising

Sec. 4. Solicitation of patients by physicians as individuals, or collectively in groups by whatsoever name these be called, or by institutions or organizations, whether by circulars or advertisements, or by personal communications, is unprofessional. This does not prohibit ethical institutions from a legitimate advertisement of location, physical surroundings and special class—if any—of patients accommodated. It is equally unprofessional to procure patients by indirection through solicitors or agents of any kind, or by indirect advertisement, or by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been or is concerned. All other like self-laudations defy the traditions and lower the tone of any profession and so are intolerable. The most worthy and effective advertisement possible, even for a young physician, and especially with his brother physicians, is the establishment of a well-merited reputation for professional ability and fidelity. This cannot be forced, but must be the outcome of character and conduct. The publication or circulation of ordinary simple business cards, being a matter of personal taste or local custom, and sometimes of convenience, is not per se improper. As implied, it is unprofessional to disregard local customs and offend recognized ideals in publishing or circulating such cards.

It is unprofessional to promise radical cures; to boast of cures and secret methods of treatment or remedies; to exhibit certificates of skill or of success in the treatment of diseases; or to employ any methods to gain the attention of the public for the purpose of obtaining patients.



### Patients and Perquisites

Sec. 5. It is unprofessional to receive remuneration from patients for surgical instruments or medicines; to accept rebates on prescriptions or surgical appliances, or perquisites from attendants who aid in the care of patients.

### Medical Laws—Secret Remedies

Sec. 6. It is unprofessional for a physician to assist unqualified persons to evade legal restrictions governing the practice of medicine; it is equally unethical to prescribe or dispense secret medicines or other secret remedial agents, or manufacture or promote their use in any way.

### Safeguarding the Profession

Sec. 7. Physicians should expose without fear or favor, before the proper medical or legal tribunals, corrupt or dishonest conduct of members of the profession. All questions affecting the professional reputation or standing of a member or members of the medical profession should be considered only before proper medical tribunals in executive sessions or by special or duly appointed committees on ethical relations. Every physician should aid in safeguarding the profession against the admission to its ranks of those who are unfit or unqualified because deficient either in moral character or education.

## Article II.—Professional Services of Physicians to Each Other

### Physicians Dependent on Each Other

Section 1. Experience teaches that it is unwise for a physician to treat members of his own family or himself. Consequently, a physician should always cheerfully and gratuitously respond with his professional services to the call of any physician practicing in his vicinity, or of the immediate family dependents of physicians.

### Compensation for Expenses

Sec. 2. When a physician from a distance is called on to advise another physician or one of his family dependents, and the physician to whom the service is rendered is in easy financial circumstances, a compensation that will at least meet the traveling expenses of the visiting physician should be proffered. When such a service requires an absence from the accustomed field of professional work of the visitor that might reasonably be expected to entail a pecuniary loss, such loss should, in part at least, be provided for in the compensation offered.

### One Physician to Take Charge

Sec. 3. When a physician or a member of his dependent family is seriously ill, he or his family should select a physician from among his neighboring colleagues to take charge of the case. Other physicians may be associated in the care of the patient as consultants.

## Article III.—Duties of Physician in Consultations

### Consultations Should Be Encouraged

Section 1. In serious illness, especially in doubtful or difficult conditions, the physician should request consultations.

Sec. 2. In every consultation, the benefit to be derived by the patient is of first importance. All the physicians interested in the case should be frank and candid with the

patient and his family. There never is occasion for insincerity, rivalry or envy and these should never be permitted between consultants.

### Punctuality

Sec. 3. It is the duty of a physician, particularly in the instance of a consultation, to be punctual in attendance. When, however, the consultant or the physician in charge is unavoidably delayed, the one who first arrives should wait for the other for a reasonable time, after which the consultation should be considered postponed. When the consultant has come from a distance, or when for any reason it will be difficult to meet the physician in charge at another time, or if the case is urgent, or if it be the desire of the patient, he may examine the patient and mail his written opinion, or see that it is delivered under seal, to the physician in charge. Under these conditions, the consultant's conduct must be especially tactful; he must remember that he is framing an opinion without the aid of the physician who has observed the course of the disease.

### Patient Referred to Specialist

Sec. 4. When a patient is sent to one specially skilled in the care of the condition from which he is thought to be suffering, and for any reason it is impracticable for the physician in charge of the case to accompany the patient, the physician in charge should send to the consultant by mail, or in the care of the patient under seal, a history of the case, together with the physician's opinion and an outline of the treatment, or so much of this as may possibly be of service to the consultant; and as soon as possible after the case has been seen and studied, the consultant should address the physician in charge and advise him of the results of the consultant's investigation of the case. Both these opinions are confidential and must be so regarded by the consultant and by the physician in charge.

### Discussions in Consultation

Sec. 5. After the physicians called in consultation have completed their investigations of the case, they should meet by themselves to discuss conditions and determine the course to be followed in the treatment of the patient. No statement or discussion of the case should take place before the patient or friends, except in the presence of all the physicians attending, or by their common consent; and no opinions or prognostications should be delivered as a result of the deliberations of the consultants, which have not been concurred in by the consultants at their conference.

### Attending Physician Responsible

Sec. 6. The physician in attendance is in charge of the case and is responsible for the treatment of the patient. Consequently, he may prescribe for the patient at any time and is privileged to vary the mode of treatment outlined and agreed on at a consultation whenever, in his opinion, such a change is warranted. However, at the next consultation, he should state his reasons for departing from the course decided on at the previous conference. When an emergency occurs during the absence of the attending physician, a consultant may provide for the emergency and the subsequent care of the patient until the arrival of the physician in charge, but should do no more than this without the consent of the physician in charge.

### Conflict of Opinion

Sec. 7. Should the attending physician and the consultant find it impossible to agree in their view of a case

another consultant should be called to the conference or the first consultant should withdraw. However, since the consultant was employed by the patient in order that his opinion might be obtained, he should be permitted to state the result of his study of the case to the patient, or his next friend in the presence of the physician in charge.

#### Consultant and Attendant

Sec. 8. When a physician has attended a case as a consultant, he should not become the attendant of the patient during that illness except with the consent of the physician who was in charge at the time of the consultation.

#### Article IV.—Duties of Physicians in Cases of Interference Criticism to Be Avoided

Section 1. The physician, in his intercourse with a patient under the care of another physician, should observe the strictest caution and reserve; should give no disingenuous hints relative to the nature and treatment of the patient's disorder; nor should the course of conduct of the physician, directly or indirectly, tend to diminish the trust reposed in the attending physician. In embarrassing situations, or wherever there may seem to be a possibility of misunderstanding with a colleague, the physician should always seek a personal interview with his fellow.

#### Social Calls on Patient of Another Physician

Sec. 2. A physician should avoid making social calls on those who are under the professional care of other physicians without the knowledge and consent of the attendant. Should such a friendly visit be made, there should be no inquiry relative to the nature of the disease or comment upon the treatment of the case, but the conversation should be on subjects other than the physical condition of the patient.

#### Services to Patient of Another Physician

Sec. 3. A physician should never take charge of or prescribe for a patient who is under the care of another physician, except in an emergency, until after the other physician has relinquished the case or has been properly dismissed.

#### Criticism to Be Avoided

Sec. 4. When a physician does succeed another physician in the charge of a case, he should not make comments on or insinuations regarding the practice of the one who preceded him. Such comments or insinuations tend to lower the esteem of the patient for the medical profession and so react against the critic.

#### Emergency Cases

Sec. 5. When a physician is called in an emergency and finds that he has been sent for because the family attendant is not at hand, or when a physician is asked to see another physician's patient because of an aggravation of the disease, he should provide only for the patient's immediate need and should withdraw from the case on the arrival of the family physician after he has reported the condition found and the treatment administered.

#### When Several Physicians Are Summoned

Sec. 6. When several physicians have been summoned in a case of sudden illness or of accident, the first to arrive should be considered the physician in charge. However, as soon as the exigencies of the case permit, or on

the arrival of the acknowledged family attendant or the physician the patient desires to serve him, the first physician should withdraw in favor of the chosen attendant; should the patient or his family wish some one other than the physician known to be the family physician to take charge of the case the patient should advise the family physician of his desire. When, because of sudden illness or accident, a patient is taken to a hospital, the patient should be returned to the care of his known family physician as soon as the condition of the patient and the circumstances of the case warrant this transfer.

#### A Colleague's Patient

Sec. 7. When a physician is requested by a colleague to care for a patient during his temporary absence, or when, because of an emergency, he is asked to see a patient of a colleague, the physician should treat the patient in the same manner and with the same delicacy as he would have one of his own patients cared for under similar circumstances. The patient should be returned to the care of the attending physician as soon as possible.

#### Relinquishing Patient to Regular Attendant

Sec. 8. When a physician is called to the patient of another physician during the enforced absence of that physician, the patient should be relinquished on the return of the latter.

#### Substituting in Obstetric Work

Sec. 9. When a physician attends a woman in labor in the absence of another who has been engaged to attend, such physician should resign the patient to the one first engaged, upon his arrival; the physician is entitled to compensation for the professional services he may have rendered.

#### Article V.—Differences Between Physicians Arbitration

Section 1. Whenever there arises between physicians a grave difference of opinion which cannot be promptly adjusted, the dispute should be referred for arbitration to a committee of impartial physicians, preferably the Board of Censors of a component county society of the American Medical Association.

#### Article VI.—Compensation Limits of Gratuitous Service

Section 1. The poverty of a patient and the mutual professional obligation of physicians should command the gratuitous services of a physician. But endowed institutions and organizations for mutual benefit, or for accident, sickness and life insurance, or for analogous purposes, have no claim upon physicians for unremunerated services.

#### Contract Practice

Sec. 2. It is unprofessional for a physician to dispose of his services under conditions that make it impossible to render adequate service to his patient or which interfere with reasonable competition among the physicians of a community. To do this is detrimental to the public and to the individual physician, and lowers the dignity of the profession.

"By the term 'contract practice' as applied to medicine is meant the carrying out of an agreement between a



physician or a group of physicians, as principals or agents, and a corporation, organization or individual, to furnish partial or full medical services to a group or class of individuals for a definite sum or a fixed rate per capita.

"Contract practice per se is not unethical. However, certain features or conditions if present make a contract unethical, among which are: (1) When there is solicitation of patients, directly or indirectly. (2) When there is underbidding to secure the contract. (3) When the compensation is inadequate to assure good medical service. (4) When there is interference with reasonable competition in a community. (5) When free choice of a physician is prevented. (6) When the conditions of employment make it impossible to render adequate service to the patients. (7) When the contract because of any of its provisions or practical results is contrary to sound public policy.

"Each contract should be considered on its own merits and in the light of surrounding conditions. Judgment should not be obscured by immediate, temporary or local results. The decision as to its ethical or unethical nature must be based on the ultimate effect for good or ill on the people as a whole."

#### Commissions

Sec. 3. When a patient is referred by one physician to another for consultation or for treatment, whether the physician in charge accompanies the patient or not, it is unethical to give or to receive a commission by whatever term it may be called or under any guise or pretext whatsoever.

#### Direct Profit to Lay Groups

Sec. 4. It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization, group or individual, by whatever name called, or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure is beneath the dignity of professional practice, is unfair competition with the profession at large, is harmful alike to the profession of medicine and the welfare of the people, and is against sound public policy.

### CHAPTER IV.—THE DUTIES OF THE PROFESSION TO THE PUBLIC

#### Physicians as Citizens

Section 1. Physicians, as good citizens and because their professional training specially qualifies them to render this service, should give advice concerning the public health of the community. They should bear their full part in enforcing its laws and sustaining the institutions that advance the interests of humanity. They should co-

operate especially with the proper authorities in the administration of sanitary laws and regulations. They should be ready to counsel the public on subjects relating to sanitary police, public hygiene and legal medicine.

#### Public Health

Sec. 2. Physicians, especially those engaged in public health work, should enlighten the public regarding quarantine regulations; on the location, arrangement and dietaries of hospitals, asylums, schools, prisons and similar institutions; and concerning measures for the prevention of epidemic and contagious diseases. When an epidemic prevails, a physician must continue his labors for the alleviation of suffering people, without regard to the risk to his own health or life or to financial return. At all times, it is the duty of the physician to notify the properly constituted public health authorities of every case of communicable disease under his care, in accordance with the laws, rules and regulations of the health authorities of the locality in which the patient is.

#### Public Warned

Sec. 3. Physicians should warn the public against the devices practiced and the false pretensions made by charlatans which may cause injury to health and loss of life.

#### Pharmacists

Sec. 4. By legitimate patronage, physicians should recognize and promote the profession of pharmacy; but any pharmacist, unless he be qualified as a physician, who assumes to prescribe for the sick, should be denied such countenance and support. Moreover, whenever a druggist or pharmacist dispenses deteriorated or adulterated drugs, or substitutes one remedy for another designated in a prescription, he thereby forfeits all claims to the favorable consideration of the public and physicians.

#### Conclusion

While the foregoing statements express in a general way the duty of the physician to his patients, to other members of the profession and to the profession at large, as well as of the profession to the public, it is not to be supposed that they cover the whole field of medical ethics, or that the physician is not under many duties and obligations besides these herein set forth. In a word, it is incumbent on the physician that under all conditions, his bearing toward patients, the public and fellow practitioners should be characterized by a gentlemanly deportment and that he constantly should behave toward others as he desires them to deal with him. Finally, these principles are primarily for the good of the public and their enforcement should be conducted in such a manner as shall deserve and receive the endorsement of the community.

## LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. J. O. Manier, Nashville.  
 Vice President for East Tennessee—Dr. W. B. Campbell, Cleveland.  
 Vice President for Middle Tennessee—Dr. J. K. Blackburn, Pulaski.  
 Vice President for West Tennessee—Dr. G. H. Berryhill, Jackson.  
 Secretary-Editor—Dr. H. H. Shoulders.  
 Assistant Secretary-Editor—Dr. W. M. Hardy.

## TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.  
 Dr. Ralph Monger, Medical Arts Building, Knoxville.  
 Dr. W. L. Williamson, 915 Madison Avenue, Memphis.  
 Dr. H. B. Everett, 2541 Broad Street, Memphis.  
 Dr. E. R. Zemp, Walnut Street, Knoxville.

## COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.  
 Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. J. H. Revington, Chattanooga.  
 Fourth District—Dr. J. T. Moore, Algood.  
 Fifth District—Dr. John W. Sutton, Petersburg.  
 Sixth District—Dr. L. W. Edwards, Nashville.  
 Seventh District—Dr. C. D. Walton, Mt. Pleasant.  
 Eighth District—Dr. J. R. Thompson, Jackson.  
 Ninth District—Dr. E. H. Baird, Dyersburg.  
 Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

## Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.  
 Dr. H. H. Shoulders, Nashville; Middle Tennessee.  
 Dr. H. B. Everett, Memphis; West Tennessee.

## Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.  
 Dr. M. M. Cullom, Nashville; Middle Tennessee.  
 Dr. E. C. Ellett, Memphis; West Tennessee.

## OFFICERS OF COUNTY MEDICAL SOCIETIES FOR THE YEAR 1934

County	President	Vice President	Secretary-Treasurer
Anderson	J. M. Cox, Coal Creek	Thomas Jennings, Clinton	J. S. Hall, Clinton
Bedford	S. S. Moody, Shelbyville	W. T. Sharp, Farmington	Alfred Farrar, Shelbyville
Blount	E. W. Griffin, Townsend	C. C. Vinsant, Maryville	H. A. Calloway, Maryville
Bradley	E. R. Ferguson, Cleveland	Vance H. Bell, Cleveland	D. N. Arnold, Cleveland
Campbell	R. J. Buckman, Westbourne	S. S. Brown, Jellico	F. A. McClintock, Newcomb
Carroll	O. W. Fesmire, McKenzie	E. W. Hillsman, Trezevant	J. H. Williams, McKenzie
Carter	C. B. Baughman, Elizabethton		E. T. Pearson, Elizabethton
Cocke			J. E. Hampton, Newport
Chester, Henderson, and Decatur			Wm. I. Howell, Lexington
Cumberland	E. W. Mitchell, Crossville		V. L. Lewis, Crossville
Davidson	John M. Lee, Nashville	W. G. Kennon, Nashville	N. S. Shofner, Nashville
Dyer, Lake, and Crockett	W. S. Alexander, Ridgely	B. G. Marr, Dyersburg (Dyer)	
		R. E. Hellen, Ridgely, (Lake)	J. Paul Baird, Dyersburg
Fayette, Hardeman	I. R. Storie, Jamestown		B. F. McAnulty, Bolivar
Fentress	Featherston Douglas, Dyer	Paul D. Jones	J. P. Sloan, Jamestown
Gibson	John Morris, Pulaski	Joe B. Wright, Lynnville	F. L. Roberts, Trenton
Giles	C. P. Fox, Greeneville	L. E. Dyer, Greeneville	T. F. Booth, Pulaski
Greene	D. H. Bryan, Monteagle	T. F. Taylor, Monteagle	M. A. Blanton, Mosheim
Grundy	D. H. Roach, Morristown		U. B. Bowden, Pelham
Hamblen	Franklin B. Bogart, Chattanooga	James L. Bibb, Chattanooga	R. A. Purvis, Morristown
Hamilton			Wm. J. Sheridan, Chattanooga
Hardin, Lawrence, Lewis, Perry, and Wayne	J. W. Danley, Lawrenceburg		C. C. Stockard, Lawrenceburg
Haywood	R. T. Keeton, Brownsville	Glenn T. Scott, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Elroy Scruggs, Paris	R. G. Fish, Paris
Hickman	L. F. Pritchard, Only	C. V. Stevenson, Centerville	W. K. Edwards, Centerville
Humphreys	J. D. Quarles, Whiteville	R. C. Gaw, Gainesboro	W. W. Slayden, Waverly
Jackson	E. A. Guynes, Knoxville	H. T. McClain, Knoxville	F. B. Clark, Gainesboro
Knox	J. L. Dunavant, Ripley	T. E. Miller, Ripley	Jesse C. Hill, Knoxville
Lauderdale	J. E. Sloan, Boons Hill		J. R. Lewis, Ripley
Lincoln			J. M. McWilliams, Fayetteville
Loudon	D. D. Howser, Lafayette	Swann Burrus, Jackson	J. Gilbert Eblen, Lenoir City
Macon	Kelly Smythe, Bemis	C. O. Fowler, Springhill	J. Y. Freeman, Lafayette
Madison	Robert Pillow, Jr., Columbia	Watt Keiser, Columbia	S. M. Herron, Jackson
Maury		D. P. Brendle, Englewood	C. D. Walton, Mt. Pleasant
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McNairy	John R. Smith, Selmer	J. A. Hardin, Sweetwater	H. C. Sanders, Selmer
Monroe	T. M. Roberts, Sweetwater		W. J. Cameron, Sweetwater
Montgomery			Paul E. Wilson, Clarksville
Obion	W. B. Harrison, Union City	Ilar Glover, Union City	Frank Kimzey, Union City
Overton			A. B. Qualls, Livingston
Polk	H. P. Hyde, Copperhill	T. J. Hicks, Copperhill	F. O. Geisler, Isabella
Putnam	J. T. Moore, Algood	T. M. Crane, Monterey	Thurman Shipley, Cookeville
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Rutherford	W. T. Robison, Murfreesboro	J. D. Hall, Readyville	A. A. Scott, Murfreesboro
Scott			D. M. Woodward, Huntsville
Sevier	O. H. Yarberry, Sevierville	R. J. Ingle, Sevierville	C. P. Wilson, Sevierville
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			A. F. Cooper, Memphis, Secretary
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		J. C. Hutchinson, Crandall (Johnson)	Arthur Hooks, Bristol
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Weakley	T. W. Fields, Dresden	T. V. Hannings, Martin	E. J. Huey, Martin
White	R. E. Lee Smith, Doyle	E. B. Clark, Sparta	A. F. Richards, Sparta
Williamson	H. C. Stewart, Franklin	Dan German, Jr., Franklin	K. S. Howlett, Franklin
Wilson	S. B. McFarland, Lebanon	R. L. Witherington, Lebanon	J. R. Bone, Lebanon



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 Nashville

Merry Christmas to each of you. Most of our thoughts and interests are concentrated in our own homes during this holiday month. But the auxiliary recognizes and appreciates the work which you as good citizens have done, through your local auxiliary, as well as various other organizations, toward making Christmas happy for the less privileged members of our state. Mrs. Campbell and the other officers and the committee chairmen wish you and your families the merriest of Christmases and a happy and successful year for 1935.

Mrs. Robert M. Tomlinson, president of the Woman's Auxiliary to the American Medical Association, stopped in Nashville for a short visit while en route home to Wilmington, Delaware, after attending the meeting of the Woman's Auxiliary to the Southern Medical Association in San Antonio. While in Nashville, Mrs. Tomlinson conferred with Mrs. R. N. Herbert, president-elect of the Woman's Auxiliary to the American Medical Association, and with Mrs. J. D. Lester, national chairman of Hygeia. Mrs. Tomlinson expressed her appreciation of the work done by the auxiliary in Tennessee.

## REPORTS OF LOCAL AUXILIARIES

Davidson County—Mrs. B. F. Byrd, President.

The Woman's Auxiliary to the Davidson County Medical Society met on Friday, November 2, at the Y. W. C. A. in Nashville. Dr. G. Y. Graves of Bowling Green, Kentucky, spoke on the subject of "Jane Todd Crawford." The program was in line with that planned by the Woman's Auxiliary to the Southern Medical Association to create interest in the erection of a memorial to Mrs. Crawford. Vocal numbers appropriate to the spirit of the meeting were sung by Mrs. Fowler Hollabaugh. Mrs.

Byrd presided over the business section of the meeting. Following the meeting, luncheon was served at the University Club, at which the speaker was the honor guest. The tables were decorated with chrysanthemums and other fall flowers.

#### NEWS ITEM

Mrs. P. G. Morrissey, of Nashville, has accompanied her husband to Atlanta, where Dr. Morrissey is attending the Urological Convention.

### NEWS NOTES AND COMMENTS

Application blanks are now available for space in the Scientific Exhibit at the Atlantic City Session of the American Medical Association, June 10-14, 1935. The Committee on Scientific Exhibit requires that all applicants fill out the regular application form and requests that this be done as early as convenient. Applications close February 25, 1935.

Persons desiring application blanks should address a request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

Dr. Battle Malone, of Memphis, announces the removal of his offices on December 1 to 1400 Monroe Avenue, where he will have as his associate Dr. Battle Malone, II.

#### 1935 DUES

The first payment of dues for 1935 has been received at the headquarters office. This year Dr. J. S. Hall, Secretary of the Anderson County Medical Society, sent his report so that it was received in the first mail of December 5. Back in 1929, Dr. Hall was the first secretary to report. A later mail on the same day brought the Polk County report from Dr. F. O. Geisler, who was first in 1932 and 1933.

It is always a race between Anderson, Wilson, Polk, and White Counties to get the first report to our office. We would really like to see about sixty secretaries have this same determination to mail to us in Decem-

ber of each year the dues for the coming year.

Col. Fielding H. Garrison, M.D., Librarian of the William H. Welch Memorial Library at Johns Hopkins University, addressed the students and faculty of Vanderbilt University School of Medicine on Thursday, October 18, as a feature of the regular course on the History of Medicine. His subject was "Life as an Occupational Disease."

#### NASHVILLE DISTRICT OF TENNESSEE STATE ASSOCIATION OF REGISTERED NURSES

The Nashville District Nurses Association of Registered Nurses was organized in 1911. The object of this association is to establish and maintain ethical standards among nurses and to promote educational and social standing of the nursing profession.

The constitution of the association says the association shall own and maintain a registry, and this registry is called the Nashville District Association Registry.

The Committee on Association Registry consists of the president of the association, one representative from each alumnae association, one from the members at large, a member of the Academy of Medicine, and a lay person. This committee conducts the affairs of the registry as provided in by-laws of the Nashville District Nurses Association Registry for Nurses.

This registry is for the benefit: first, of the medical profession; second, for the benefit of the hospitals; third, for the benefit of the association nurse.

When using the association registry the medical profession and hospitals are furnished the very best nursing that the nursing profession can procure.

A registrar is on duty 24 hours and will give all calls courteous attention.

The responsibility of the registrar is to have the nurses' credentials, all facts in regard to all types of nursing, regarding hours, fee, schedule, allocation of calls, etc.

With the cooperation of medical profession and hospitals the nurses association is planning a Bureau of Nursing Service for the district.



## CHANGES OF ADDRESS

The following notices of new addresses have been received from personal letters and from the post office. *Kindly report all such changes.*

Dr. J. Archie Hughes, St. Joseph, Louisiana, to Camp P-51, Bogalusa, Louisiana.

Dr. B. T. Terry, Rochester, Minnesota, to Tacoma General Hospital, Tacoma, Washington.

Dr. Battle Malone, Goodwyn Institute, Memphis, to 1400 Monroe Avenue, Memphis.

Dr. Hillis L. Seay, North Wilkesboro, North Carolina, to Sanatorium, North Carolina.

Dr. S. E. Johnson, Memphis, to 301 East Messa, Gallup, New Mexico.

Dr. W. H. Gragg, Broad Street, Memphis, to 1491 Jackson.

Dr. I. E. Phillips, Concord, to CCC Camp 1457, Greeneville.

Dr. Robert Cohen, Tracy City, to Mountain State Hospital, Charleston, West Virginia.

Dr. Harry Jenkins, Knoxville, to Tulane School of Medicine, New Orleans, Louisiana.

Dr. B. T. Wright, Veterans Hospital, St. Petersburg, Florida, to Bay Pines, Florida.

Dr. A. D. Butterworth, Eagan, to Murray, Kentucky.

## MEDICAL SOCIETIES

### *Campbell County:*

At its regular meeting on November 22, the Campbell County Medical Society had as its guest Dr. S. R. Miller, councilor, of Knoxville, who read a paper, "The Medical Profession and the New Deal," before an almost hundred per cent membership attendance. His paper was a clear-cut exposition of the problems that the medical profession will be up against in the near future.

### *Davidson County:*

November 13 — "Diagnosis and Treatment of Addison's Disease with Report of Cases," by Dr. Albert Weinstein. Discussion

opened by Drs. O. N. Bryan, Sidney Burwell, and V. S. Campbell, of Murfreesboro.

November 20—"The Relations Between Sinus and Lung Infections and Between Sinus and Mastoid Infections," by Dr. Willis F. Manges, Philadelphia.

November 27—"Results of Resection of the Stomach," by Dr. Barney Brooks. Discussion opened by Dr. R. A. Barr.

December 4 — "Surgery of the Biliary Tract in the Jaundiced Patient—with Case Reports," by Dr. W. O. Floyd. Discussion opened by Dr. L. W. Edwards.

### *Gibson County:*

On November 26, at a meeting held in Trenton, Drs. Whitman Rowland and Carroll Turner, both of Memphis, were the principal speakers. There was a good attendance and a most interesting program.

### *Hamilton County:*

On December 20, the annual memorial meeting of the society will be held at 8 P.M.

### *Hardin, Lawrence, Lewis, Perry, and Wayne Counties:*

On Tuesday, November 27, the society met at Waynesboro. In addition to the scientific program, officers were elected for 1935. Dr. G. N. Springer, Hohenwald, was named president, and Dr. C. C. Stockard, Lawrenceburg, reelected secretary.

The very interesting program was as follows: "Diphtheria," by J. T. Keeton, Clifton. Discussion opened by Dr. F. H. Norman. "Rabies," by Dr. William Litterer, Nashville. Discussion opened by Dr. C. V. Stevenson. "Syphilis," by Dr. T. J. Stockard, Lawrenceburg. Discussion opened by Dr. J. H. Taylor.

### *Knox County:*

November 13—Dr. R. B. Wood, "Allergy." Discussion opened by Drs. Enneis, Zemp, Long, Tucker, and Carmichael.

November 20—Dr. E. G. Wood, "Recent Advances in Medicine and Surgery."

November 27—Dr. Leon Bromberg, of Chicago, "Syphilis in Differential Diagnosis."

December 4—Dr. W. W. Potter, "Some Eye Diseases and Their Relation to Constitutional Diseases."

#### *Robertson County:*

Officers for 1935 were elected at the November meeting. Dr. W. Foster Fyke, president; Dr. A. R. Kempf, vice-president; and Dr. W. S. Rude, secretary-treasurer, will assume their offices at the January meeting. Members present were Drs. J. R. Connell, W. F. Fyke, A. R. Kempf, W. S. Rude, John S. Hawkins, R. D. Moore, W. W. Porter, Springfield; Dr. W. L. Gossett, Adairville, Kentucky; Dr. C. M. Banks, Greenbrier.

#### *Washington County:*

On Thursday, January 3, the program will be "Surgery of the Chest," by Dr. H. M. Cass. Discussion opened by Dr. J. L. Hankins. "Cardiovascular Renal Disease," by Dr. G. J. Sells. Discussion opened by Dr. E. M. Fleenor.

### OTHER MEDICAL SOCIETIES

The eighteenth semiannual two-day meeting of the Middle Tennessee Medical Association was held in Lawrenceburg on November 8-9 with approximately 100 visiting physicians from Middle Tennessee in attendance.

The sessions were held at the First Baptist Church in this city, and a banquet was given on Thursday evening. The committee on arrangements was composed of Dr. T. J. Stockard, chairman, Dr. L. C. Harris, and Dr. John H. Tilley.

#### VANDERBILT UNIVERSITY MEDICAL SOCIETY NOVEMBER 2

##### 1. Case Reports:

(a) A Case of Aneurysm of the Superior Gluteal Artery—Dr. Barney Brooks.

Patient was a colored male, 63 years old,

who entered the hospital complaining of discomfort in the region of the right hip. Examination showed large pulsating tumor underneath right gluteus maximus muscle. Four years ago patient admitted to Vanderbilt University Hospital Out-patient Department because of epigastric and precordial discomfort. Wassermann positive. Patient received 19 injections in the buttock of bismuth. At operation, abdomen opened. Right hypogastric artery ligated. Aneurysmal tumor on the buttock then exposed and greater portion of sac extirpated. There was slight bleeding into the sac from the efferent artery which was controlled by packing the opening of the vessel with piece of muscle excised from the operative wound. Patient presented because of the extreme rarity of aneurysm of the superior gluteal artery. It was pointed out that treatment of this particular aneurysm did not involve the assumption of any risk of gangrene, because of the fact that gluteal artery does not conduct blood destined for distant tissues.

Case discussed by Dr. Burwell.

(b) Case of Leukemia Cutis—Dr. Earl P. Bowerman.

A woman of 56 years who had suffered from a diffuse erythematous, exfoliative dermatitis over the entire body for a period of 18 months. Associated with this there had been severe pruritis, extreme hypersensitivity to cold and trauma, loss of body hair, trophic changes in the nails, generalized and dependent edema, and a transitory general glandular enlargement. No contact with arsenic was discovered. In the hospital she was found to have in addition to the changes mentioned above a greatly enlarged liver, small, red, tender cutaneous nodules, a W. B. C. of 130,000, of which 70-90 per cent were lymphocytes, and a B. M. R. of +37 to +54 per cent. The clinical impression of leukemia cutis was confirmed by a biopsy of one of the cutaneous nodules which was found to exhibit extensive lymphocytic infiltration (slide exhibited by a projector).



Case discussed by Drs. Meleney, Goodpasture, and Burwell.

2. The Relation of Pregnancy Urine Hormones to Secretory Changes in the Anterior Hypothesis—Dr. J. M. Wolfe and Mr. Louis Rosenfeld.

Injection of extracts of human pregnancy urine (Follutein-Squibb) into mature and immature female rats resulted in a marked increase in the weights of the ovaries, due to the growth of many follicles and the formation of corpora lutea. The pituitaries of the injected rats were moderately to extremely increased in weight. Morphologically the anterior pituitaries exhibited a marked degranulation of the basophiles and evidence of considerable loss of granules from the eosinophiles. The relative percentage of both these granular cell types were reduced, while that of the chromophobes was increased. The above changes were considered indicative of secretory changes. Injection of these extracts had no effect on anterior pituitaries of castrated female rats, indicating that the ovary of the animal is necessary to bring about the above reaction.

Case discussed by Drs. Cunningham, Goodpasture, Mason, and Leake.

3. The Distribution of Halides in Chronic Bromism—Dr. M. F. Mason.

In chronic bromism in dog and man the ratio (Br.)cells/(Br.)serum is slightly greater than (Cl.)cells/(Cl)serum although the latter is normal or slightly elevated, indicating bound bromide in the erythrocyte. The ratio (Br.)serum/(Br.)spinal fluid is smaller in chronic bromism than in acute intoxication, but still remains greatly elevated above that for chloride. The replacement of chloride by bromide in the urine is less than that of the serum, that is, bromide is selectively retained. Either chloride or bromide may be selectively secreted in gastric juice. Dog parotid saliva likewise reflects no consistent selectivity. On the other hand, in human mixed saliva bromide is secreted preferentially over chloride.

Paper discussed by Drs. Harrison, Pilcher, and Leake.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Nembutal and Scopolamine Analgesia in Labor. A. McNeal, C. P. Bauer, and H. Sanford. *Anesthesia and Analgesia*, May-June, 1934.

In one hundred consecutive cases of labor nembutal was administered in doses from 6 to 12 grains and scopolamine 1/150 grain. In 57 patients complete amnesia was obtained. The others, with the exception of ten who remembered about half what occurred, remembered everything. The blood pressure fell at first in 36 cases but returned to normal in about one hour. In the others the blood pressure was not changed.

Acetone and diacetic acid occurred in the urine in 36 patients, all of whom were in labor over five hours. Coagulation time was not appreciably influenced. In only 14 was labor retarded. Fifty of the patients were very quiet and forty-two were moderately restless. Six were quite violent and required complete anesthetization for forceps delivery.

There were no maternal deaths and only two infant deaths, both of which were caused by the other conditions.

Eighty babies cried spontaneously, while the others were quite cyanotic but were readily resuscitated. The babies were drowsy 48 to 72 hours and there was absence of the Moro reflex. They also took 25 per cent less milk. They lost on the average of one ounce more in the first few days as compared with normal infants.

### DERMATOLOGY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

Acute Pemphigus. M. J. Fiala, M.D., Duluth, Minn. *Archives of Dermatology and Syphilology*, November, 1934.

The author reports a case in which degenerative changes of the mucous membrane of the throat and mouth frequently seen in granulocytopenia were pronounced. The sloughing and lesions of the large intestine, stomach and esophagus, however, were more like those of an acute pemphigus, and the cutaneous condition was typical of the textbook description. These lesions were different in type from those cutaneous lesions occasionally described in granulocytopenia. The lesions of the latter seem to be more deep-seated, usually with necrotic areas and crusts covering them and with definite enlargement of the regional lymph nodes.

The patient was a white woman, aged 49. She

became ill on October 30, 1932, with a suddenly severe sore throat, high fever, repeated chills and aches and pains over the entire body. A few days later blisters developed in the left submaxillary region. On November 4, she was admitted to the hospital, where the white cell count was 900 with no granulocytes present. Physical examination was negative with the exception of large bullae which had spread over most of the face and down on the chest. They contained a seropurulent liquid. The mucous membrane of the throat was sore, reddened and swollen. Six intramuscular injections of 10 cc. of pentnucleotide and 500 cc. blood transfusion was given.

The patient died on the third day. The bullous lesions at this time involved the skin over the face, body, and extremities. She had not at any time had any barbiturates or amidopyrine.

### OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

Detachment of the Retina. Treatment with Multiple Diathermic Puncture and its Results. K. Safar. American Journal of Ophthalmology, November, 1934.

Multiple punctures of the sclera are made with single or multiple diathermic needles 1.8 mm. long in the area surrounding the tear, causing coagulation of the underlying choroid. The needles are not removed, until all are in place. After removal, the subretinal fluid escapes through the punctures, the retina comes in contact with the choroid, the tear is sealed by the chorioretinal adhesions, and the detachment of the retina is healed. Various types of electrode are described and illustrated. A frequency of 30,000 to 50,000 is best as it allows easy perforation of the sclera, with moderate coagulation. The strength of current used is from 30 to 50 ma. for an electrode having one needle, from 80 to 100 ma. for an electrode with three needles, and from 150 to 200 ma. for one with five to eight needles. The author reports permanent reattachment of the retina with good vision and restoration of the visual field in 57.5 per cent of forty unselected cases in 1932 and in 85 per cent of the first forty eyes operated on in 1933.

### PEDIATRICS

By JOHN M. LEE, M.D.  
Doctors Building, Nashville

Rat-Bite Fever. S. D. Edelman, M.D., and G. B. Haber, M.D., Columbus, Ohio. The Journal of Pediatrics, October, 1934.

Since long before the Christian Era it has been known that rats are carriers of disease. Rat-bite fever is best known in Japan and China where it is called "sodoku," but cases have been reported from many parts of the world. At one time the death

rate from this disease was high. Bayne-Jones in 1931 found 81 cases reported in the literature since 1840, but it is likely that many cases have never been reported.

Rats transmit this disease by biting humans, infecting them with the causative organism, *Spirochete morsus muris*, or *Spirillum minus*, the exact mechanism of the transfer of infection being unknown. The wound of the bite heals like any other scratch. After an incubation period of from 7 days to more than a month, the wound swells, becomes tender and painful, and soon ulcerates, and becomes chancrelike in appearance. Usually there is a regional lymphadenitis. The temperature rises rapidly to 105 or 106 F., subsiding to normal the same or next day. There is a blotchy purplish red discoloration of the skin usually near the bite but at times found on other parts of the body. The temperature remains normal four or five days and again rises to 105 F., all other symptoms flaring up at the same time. This bout subsides in 24 hours and in four or five days is repeated. If the patient is not treated this cycle of recurring temperature with attendant symptoms every four or five days may be repeated indefinitely. In the absence of treatment, the lymphadenitis may persist several weeks.

With the history of a rat bite and recurring cycles of temperature with discoloration of the skin, swelling of the wound, and lymphadenitis, the diagnosis should be made. Japanese workers have isolated spirochetes in the primary ulcer, the lymph nodes, and the blood. The authors have failed to do this. However, they did find that their patients showed a weakly positive Wassermann and a strongly positive Kahn test during the febrile period, and this persisted for several months unless treatment was continued. Eventually all serologic tests become negative.

Local treatment of the wound may abort an attack. Calomel ointment or dusting powder should be applied to the wound, especially if seen late when the wound is chancre like. Should rat-bite fever develop, arsphenamines are recommended. The authors report three cases in children treated with sulpharsphenamine deep in the muscle of the buttock, giving the regular U. S. P. dose, and following Young's law for children. Five or six doses, given one week apart, resulted in gradual improvement, and discharge apparently cured.

### SURGERY—GENERAL AND ABDOMINAL

By ROBIN F. MASON, M.D., F.A.C.S.  
735 Medical Arts Building, Memphis

Preoperative Preparation of the Peritoneum in Surgery of the Large Intestine. Edward L. Young, Jr., M.D., F.A.C.S., and George A. Marks, M.D., Boston. S. G. & O., Volume LIX, October, 1934, Number 4.

The writers believe that the chief factor in the mortality of surgery of the large intestine is peritonitis, due to possibly three things:



1. Poor operative technique causing soiling.
2. Soiling of peritoneum due to late leak.
3. Lack of immunity in the peritoneum.

They believe the first danger to be lessened, due to improved mechanical apparatus, as, for instance, the Rankin Clamp. They think the second danger is lessened by the use of restorative chemical measures. The third danger they have recently begun to study, with the idea of producing artificially a local peritoneal immunity.

They cite the fact that the peritoneum reacts to various sterile substances in a manner not yet understood fully.

They mention the attempts of Barger and Rankin, who several years ago began injecting intraperitoneally vaccine prepared from streptococci and colon bacilli recovered from fatal cases of peritonitis, in order to produce a local peritoneal immunity.

The above-mentioned surgeons reported a reduction in mortality from 23 per cent to 5 per cent. The authors state that very little is actually known about immunity itself, but that we do know the result of the process which ends in immunity.

They then show that local immunity is well known to surgeons. As an example, they state that it is well known that, in operating on gall bladders which have recently undergone acute infections and subsided, the spilling of pus from such a gall bladder into the peritoneal cavity is usually innocuous. They believe that, because the process of immunity is so complicated, there might be doubt as to whether the procedure of Rankin and Barger produced a specific immunity or whether the immunizing effect was simply the reaction of the peritoneum to an insult represented by the introduction of a foreign protein into the cavity.

The papers of Johnson and Warren on the use of amniotic fluid intraperitoneally after operation were the spark that ignited their experiments.

In the present study 49 cases were used, involving for the most part operations on the large intestine. In the first 10 or 12 cases the amounts of amniotic fluid used varied from 50 to 200 cc. They tried it 1 to 2 days and 1 to 3 days preoperative. The results appeared to be the same, so they began using the time interval usually seen in experimental aseptic peritonitis in animals, viz., 5 to 8 hours preoperative. The last 35 cases were injected 5 to 8 hours preoperative with 50 to 100 cc. As a rule there was little reaction.

They found at operation done at the height of the reaction from 6 to 12 ounces of cloudy fluid in the cavity, which was sterile on culture and showed polynuclear cells on smear. The patients' leucocyte count would increase from normal to as high as 30,000. The leucocytes in the peritoneal count would be from 50,000 to 100,000.

In the 49 cases there were three deaths, one from pneumonia, one from a leak, and one from a post-operative obstruction which had to be reopened. The third case was the only one that exhibited a peritonitis, and it was rather local in character.

They tried using tragacanth in combination with the amniotic fluid but saw no improvement in effect, so discontinued its use. The mortality rate was apparently reduced in comparison with a former group of like cases, 46 in number, from 38 per cent to 2 per cent.

The writers conclude from their data that the use of a nonspecific stimulant to the peritoneum preoperatively contributes much to the safety of resection of hollow viscera.

## UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
Medical Building, Knoxville

**Bismuth in the Treatment of Syphilis.** Helen Harrington. *American Journal Syphilis*, October, 1934.

Balzar in 1889 first suggested the use of bismuth in the treatment of syphilis.

In 1916 Robert and Sauton showed bismuth to have a curative effect in spirillosis. In 1921 Sazerac and Levaditi showed this drug to be curative in experimental syphilis. This was later used by them in human lues, and it is to them that we are now indebted for its general use. They found bismuth to be more effective than mercury, but less so than arsphenamine. This work was confirmed by Fournier and Guenot. Many different preparations are in use today. The suspension of bismuth contains 96 per cent of the metal. Colloidal bismuth is also employed by a few.

Bismuth hydroxide, bismuth oxychloride, and the sodium potassium tartrate suspensions are in common use. Oily suspensions are said to be less painful than the above.

Of the soluble solutions, potassium bismuth tartrate was the first soluble preparation used by Levaditi and Sazerac, and is today quite popular. Levaditi believes that the liposoluble bismuth did not act merely on the visible specific lesion and on the spirochetes, but that it produced complete sterilization of the organism. He thinks the lipid soluble bismuth represents the most effective, the best tolerated, and the most likely to be assimilated.

Solutions containing electronegative bismuths have recently been put on the market, the claims for these being that they penetrate the cerebrospinal system. It is not thought that their greatest role is in the prevention of neurosyphilis.

The mode of action of bismuth is not well understood, but the work of Kolle and Evers has suggested it acts by inhibiting the action of tissue rather than by inhibiting the organisms.

It is thought that bismuth is absorbed as an oxide of bismuth.

Water and tissue soluble bismuth are absorbed quickly. The suspension of the drug has the slowest absorption rate.

Distribution of bismuth in the body is widely scattered. It has been found in large intestine, kidneys, spleen, salivary glands, brain, and liver,

also in the blood, cerebrospinal fluid, saliva, bile, feces, sweat, urine, and milk.

The routes of excretion are the same as mercury. Forty-three days after a single injection of lipoid solution bismuth, this drug could be demonstrated in the kidney. It has been shown, however, that it has a relatively low toxicity for the kidney. Schamberg and Wright state that bismuth is a drug that may be used in any stage of the disease, either alone or with arsenic. They believe, however, that it should be used as an adjunct to arsphenamine.

## BOOK REVIEWS

Synopsis of Genitourinary Diseases. A. I. Dodson, M.D. 265 pages, 103 drawings, 8 photographs. Price, \$3.00. C. V. Mosby Co. 1934.

The purpose of this book was "to present a synopsis of genitourinary diseases, so that the essential facts connected with urology may be readily grasped by the student, and serve as a handy reference for the physician in practice." This purpose is well carried out in the small compend, which represents all of the newer concepts of both urology and venereal diseases. In this small volume one can find a brief outline of all the essential points in the diagnosis and treatment of all urological diseases. The chapter on nontuberculous urinary infections is especially well written and practical.

No general practitioner can afford to be without this book, and urologists will find it of great value as a quick reference. The great advances along the whole line of modern urology are told in a most concise manner. There is not a superfluous sentence in the entire book.

To all physicians desirous of keeping abreast with the diagnosis and treatment of urologic conditions, this book is unconditionally recommended.

T. R. B.

Allergy and Applied Immunology. Second Edition. Warren T. Vaughn. 1934. Publishers, The C. V. Mosby Company. Price, \$5.00.

This book is a comprehensive yet simple discussion of the general field of allergy and immunity. It is written, as it professes to be, chiefly for the layman and general practitioner in comparatively nontechnical language. It is a revision of the excellent work published in 1931, bringing this up to date and including the newer advances in the subject, among the most important of which, according to the author, are those in the field of

physical allergy and in contact dermatitis diagnosed by the patch test.

Part 1 begins with a discussion of the history and theory of allergy. Allergy of various types is discussed and its relation to anaphylaxis indicated. The tendency to it is inherited, but the symptoms may vary in different members of the family. A chapter is devoted to the state of allergic balance or equilibrium, and the significance of minor allergies in the general population is discussed and emphasized.

Part 2, devoted to allergens, is a discussion of the nature of allergenic substances, and constitutes a practical, handy reference work as to their importance, places in which they may be found, and means necessary for their elimination from the sensitive patient's environment.

Part 3, devoted to diagnosis, briefly discusses the various necessary steps to a diagnostic survey of the patient, including the allergic history, a complete physical examination, laboratory tests, and skin tests. The patient with the allergy is to be considered, rather than the allergy itself.

Part 4, devoted to therapy, considers the practical difficulties encountered in discovering and removing various allergens from the environment, together with specific methods of desensitization to them. It contains a discussion of elimination diets, to which the author adds some valuable contributions in the field of trial diets, based on the genetic grouping of foods, and in practical forms for the food diary which is often a necessary means of a diagnosis.

Part 5 is devoted to prognosis, and Part 6 to the various manifestations of allergy. Here space is devoted to the discussion of asthma, allergic bronchitis, hoarseness, hay fever, canker sores, conjunctivitis, and nasal allergy, urticaria, pruritis, angioneurotic edema, eczema, trichophytosis and its related hypersensitivity, migraine, epilepsy, indigestion, colic, colitis, cyclic vomiting, dysmenorrhea, angina pectoris, and other typical and atypical allergic manifestations. Part 7 is devoted to applied immunology and includes a discussion of bacterial desensitization.

The appendix contains practical direction for general regimes for patients with asthma, eczema, rhinitis, colitis, etc., handy questionnaires for ferreting out obscure diagnoses, and the author's recipes for staple foods made without important foodstuffs, especially wheat, milk, and eggs.

It is a handy reference book for allergists as well as general practitioners, and a handbook for the more intelligent, somewhat scientifically trained, patient. EDNA S. PENNINGTON, M.D.



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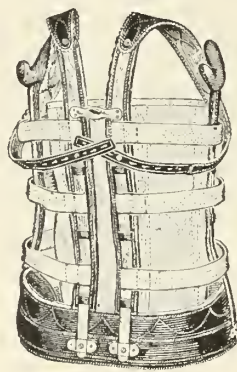
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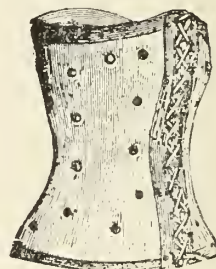
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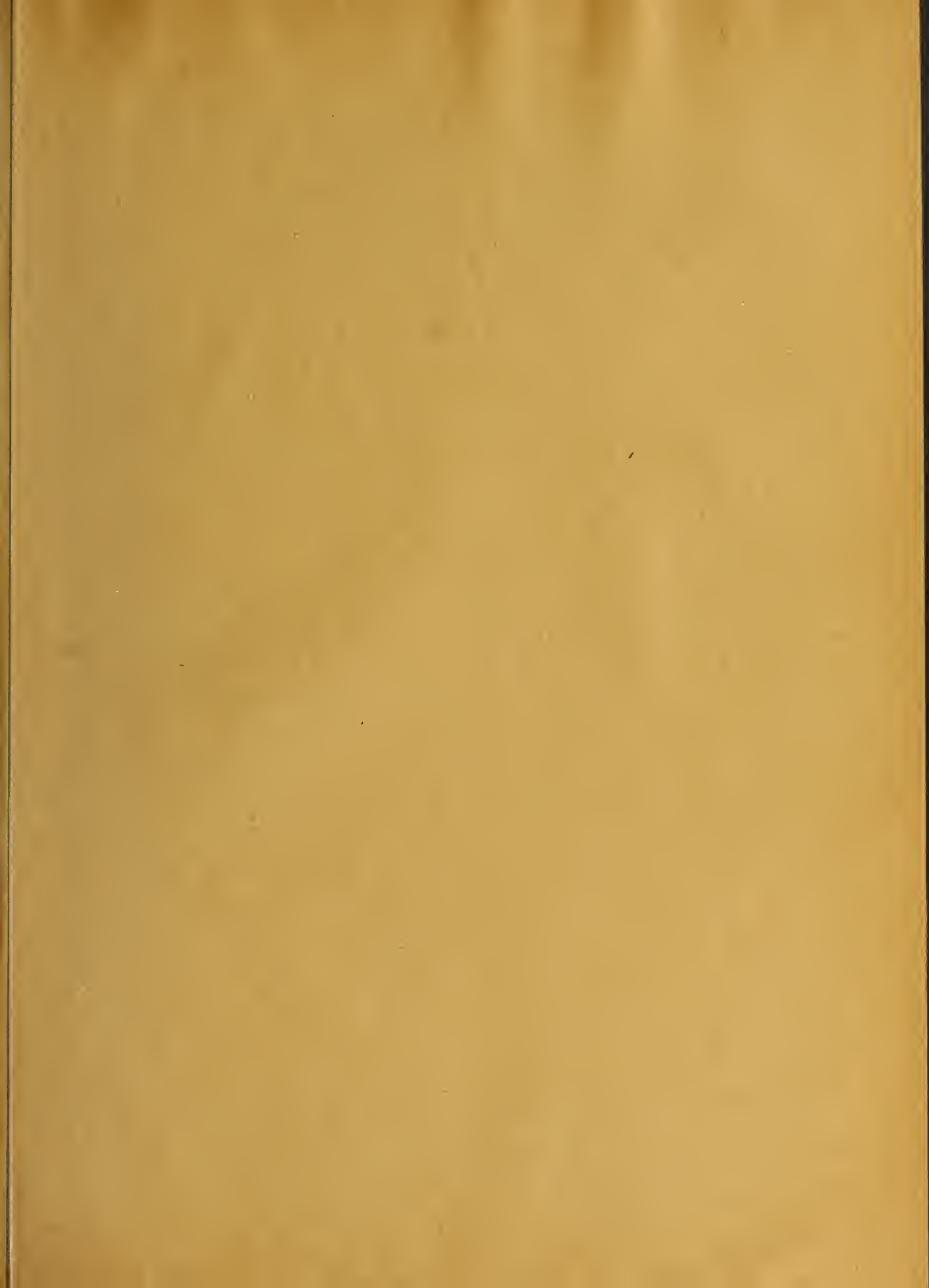
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